Environmental Monitoring Report

Project Number: 41627-053
March 2015

Period: July 2014 – December 2014

IND: Himachal Pradesh Clean Energy Development Investment Program - Tranche 4

Submitted by

Himachal Pradesh Power Corporation Limited, Shimla

Asian Development Bank

BRB/RGS/VRK
25/2

HIMACHAL PRADESH POWER CORPORATION LTD.
(A State Government Undertaking)
Uttam Bhawan (Dogra Lodge), Below 103 Tunnel,Shimla-171004 HP India
Phone: 0177-2658397 | Fax :0177-2659899

No. HPPCL/ESMU/STKHEP/QR/2015-1244-47 Dated: 21.02.2015

To

Ms. Teresa Kho,
Country Director,
South Asia Department, India Resident Mission,
4 San Martin Marg, Chanakyapuri,
New Delhi-110021

Subject: **Submission of Six monthly Compliance Status Report on Environment Management Plan, Environment Clearance, Forest Clearance and Public Hearing for the period ending 31.12.2014 - Shongtong Karchham HEP.**

Madam,

Please find enclosed herewith six monthly Compliance Status Report on Environment Management Plan, Environment Clearance, Forest Clearance and Public Hearing for the period ending 31.12.2014 in respect of Shongtong Karchham HEP for your information and record please.

Encl: As above

Yours faithfully,

21.02.15
(Rakesh Sood IFS)
Chief Environment Specialist

CC:

1. Mr. V. R. Karbar, Team Leader, South Asia Department, India Resident Mission, 4 San Martin Marg, Chanakyapuri, New Delhi-110021 for information, please.
2. Mr. Ralf Starkloff, Senior Safeguard Specialist, South Asia Department, India Resident Mission, 4 San Martin Marg, Chanakyapuri, New Delhi-110021 for information, please.
3. The General Manager, Shongtong Karchham HEP, HPPCL, Reckong Peo, Distt. Kinnaur for information please.

Himachal Pradesh Power Corporation Limited
(A State Government Undertaking)
Shongtong-Karchham Hydro Electric Project, Reckong-Peo
Phone: - 01786-222310, 222962, 222801, Fax:-01786- 223174, Email: - skhep.hppcl@gmail.com

No. HPPCL/DGM(R&R)-STKHEP/ Comp-I/2014- 8924-28 Dated:- 18/2/2015

To

The Chief Environment Specialist,
Uttam Bhawan (Dogra Lodge) Near 103 Tunnel,
Shimla-04.

Subject: - Reg. six monthly compliance status reports for ending period 31.12.2014.

Sir,

This is with reference to subject cited above and your email on dated 16.02.2015 vide which six monthly compliance status report in r/o Shongtong Karchham HEP was sought from this office.

In this context, the six monthly compliance status report for ending period 31.12.2014 is hereby submitted for your kind information and further necessary action at your end, please.

Your's faithfully,

18/2/15

Dy. General Manager (R&R),
SKHEP, HPPCL, R/Peo,
Distt. Kinnaur (H.P.).

Encl: As Above

Dy. No. 48
Date 20.2.15

Copy forwarded to:-

1. The Director (Civil), HPPCL, Himfed Building, Bye Pass Road (Panjri), Below Old MLA's Quarters, Tutikandi, Shimla, Himachal Pradesh -5 for information, please.
2. The General Manager, STKHEP, HPPCL, Reckong Peo for information, please.
3. The Addl. General Manager (CP) HPPCL, Himfed Building, Bye Pass Road (Panjri), Below Old MLA's Quarters, Tutikandi, Shimla, Himachal Pradesh -5 for information and further necessary action, please.
4. The Sr. Manager (Q & M), STKHEP, HPPCL, Reckong Peo for information, please.

Consultant (Env.)

Mood 19.02.15

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JORR-A

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ENVIRONMENT SAFEGUARDING AND MANAGEMENT REPORT

I	Name of Project	Shongtong Karchham HEP
II	Name of Monitoring/Reporting Agency and address	Himachal Pradesh Power Corporation Limited
III	Monitoring Period (season/month)	1st July 2014 to 31st December 2014
IV	Report No.	2
V	Report for the period	July 2014 to December 2014
VI	Date of reporting	

A. IMPLEMENTATION OF SAFEGUARDING MEASURES

1. Forest Clearance: Forest Clearance for the project was granted by MoEF vide F.no. 8-78/2010-FC, dated 14th Nov. 2012 (**submitted with previous compliance report**).

Sr. No.	Description	Compliance Status
1.	Legal Status of the diverted forest land shall remain unchanged.	HPPCL will not seek any changes in status of diverted forest land.
2	The Compensatory Afforestation (CA) will be raised and maintained over double the area proposed for diversion in a degraded forest land (i.e. 128 ha) at the cost of User Agency.	Condition is complied with by paying the requisite amount to CAMPA through DFO Kinnaur. CA over twice the area of degraded forestland shall be undertaken by the Department of Forest Govt. of HP. The HPPCL has deposited the requisite cost towards CA with Department of Forest, Govt. of HP amounting to Rs. 1, 74, 65,952/- (One crore seventy-four lakhs sixty-five thousand nine hundred and fifty two) only vide DD No. 630072 dated 02.04.2011 (worth Rs. 7, 44, 26,798/- including amount for NPV) drawn on Reckong Peo branch of State Bank of India vide their letter No. HPPCL/GM-STKHEP/Forest/2010-24-27, dated 02.04.2011 as per the bill issued by DFO Kinnaur vide letter No 9216 dated 30.03.2011.
3	The user Agency shall pay the additional NPV, if so determined, as per the final decision of Hon'ble Supreme Court of India.	Condition has been complied with by paying the requisite amount to CAMPA through DFO Kinnaur. HP Forest Department through DFO Kinnaur raised a bill for Rs. 5, 69, 60,846/- (Five crore sixty-nine lakh sixty thousand eight hundred and

		forty-six) only against NPV vide letter No. 9216 on dated 30.03.2011 and same has been deposited vide DD No. 630072 dated 02.04.11 with the DFO Kinnaur HP The same has been **submitted with previous compliance report**. An undertaking to pay the additional NPV, if so determined as per the final decision of Hon'ble Supreme Court of India has been given.
4	All the funds received from the user Agency under the project shall be transferred to Ad-hoc CAMPA pertaining to the state.	Pertains to HP Forest Department.
5	The State Government shall ensure that minimum flow of 15% is maintained at all time.	HPPCL has committed to maintain a minimum flow of 20% as downstream discharge at all time from the diversion structure of the project.
6	The user agency shall set up Ecological Monitoring Unit to monitor the impact of the project on flora and fauna of the area.	An Ecological Monitoring Unit has been set-up in the district with DFO, Kinnaur as its Chairman. **(submitted with previous compliance report)**
7	The user agency shall keep the effect of camping labourers on the flora and fauna during the construction phase of 48 months at minimum by providing alternate fuel for cooking and heating.	The contract conditions for the project components already provide for arrangement of alternate fuel for community kitchen run on LPG or kerosene or electricity and also the document provides for similar arrangement for heating (based on Kerosene). If at all fuel wood is to be procured, it has to be through authorized sources only. Till Nov. 2013, 69 nos. of Gas cylinder had been provided.
8	The entire reservoir created due to submergence shall be declared Reserve Forest under Indian Forest Act. 1927 within six months. However, regulated fishing shall be allowed. Nodal officer shall submit compliance report in this regard.	Since the Project is a Run-of-the-River type (RoR) hydropower project with diversion done through a barrage with head race tunnel (HRT). Thus, the submergence area is very small (27 hectares), which shall be got declared as Reserve Forest under Indian Forest Act. 1927 through HP State Forests Department with regulated fishing being allowed.

9	Catchment Area Treatment Plan should be implemented at the project cost under the supervision of the State Government.	As per HP Govt. notification no. FFE-B-F-(2)-72/2004-PT-II dated 30/09/2009, 2.5% of total project cost has been kept for Catchment Area Treatment Plan which comes out to be Rs. 701.95 millions. Out of which Rs. 604.4 million has been deposited in Ad-hoc CAMPA account, New Delhi pertaining to the state vide UTRN: UCBAH12275077542, dated 01/10/2012, submitted to the office of D.F.O, Kinnaur. The activities for FY 2014-15 have been provided by HP Forest Department (**Annexure-I**). The progress of activities will be provided after the closing of the financial year on 31st March 2015.
10	Green belt of adequate width shall be raised by the user agency around the reservoir at the cost of the project.	A plan for Green belt development around reservoir and around surface components and along project roads at the cost of the project has been included in the EMP for which provision of 40 lacs has been made in EMP (Chapter-9). The same will be taken after the NH-5 widening work and dumping of muck is completed around the reservoir area.
11	The user agency shall facilitate a basin level study on the impact of HEP's on the flora & fauna of the as per the TOR submitted to MoEF.	The Draft of Cumulative Environment Impact Assessment Study (CEIAS) of Satluj basin has been submitted by the consultant (ICFRE, Dehradun) to Directorate of Energy, GoHP and has been put up in public domain at their website. Public hearing in this context has been held at Reckong Peo and Pooh, Distt Kinnaur on 8th and 9th December, 2014 and the observations of the locals and NGO's are under consideration at Directorate of Energy, GoHP (**Annexure-II**).
12	The user agency shall carry out the muck disposal at pre-designated sites in such a manner so as to avoid its rolling down.	This condition is being complied with strictly and free of cost lifting of usable muck is being allowed to local people and developmental agencies to reduce burden of disposal as also to meet their

		requirement without disturbing a new area. It is further submitted that the State Pollution Control Board too is monitoring this aspect punctually and diligently.
13	The dumping area for muck disposal shall be stabilized and reclaimed by planting suitable species by the user agency at the cost of project under the supervision of State Forest Department. Retaining walls and terracing shall be carried out to hold the dumping material in place. Stabilization and reclamation of such dumping sites shall be completed before handing over the same to the State Forest Department. In a time bound manner as per Plan.	A detailed Muck Management Plan (MMP) has been prepared as part of EMP (Chapter-6) which prescribes for engineering and biological measures for stabilization of dumped muck. The MMP is being implemented diligently. As already submitted, its implementation is also being monitored strictly by the State Pollution Control Board.
14	The user agency to consult other organisation having experience in construction of roads in hilly areas such as BRO to avoid frequent road blocked due to landslides etc. and shall provide breast walls and retaining walls wherever necessary.	The agency like BRO, GREF and HP PWD etc. are being consulted for proper construction of roads as and when required although, HPPCL itself has sufficient experience and qualified staff to make environment friendly roads.
15	The Forest Department shall regenerate equivalent amount of degraded forest area, in addition to the condition no. 2. As the user agency does not have qualified manpower and control on the forest area to execute the same, they have paid for the same to the CF, Rampur. The Forest Department shall implement the same and submit a compliance report.	Total of Rs. 1,36,73,737/- have been deposited with D.F.O, Kinnaur for regenerating equivalent amount of degraded forest area, in addition to the condition no. 2 (**submitted with previous compliance report**). No activity has been taken up yet by the concerned department.
16	The User Agency shall submit annual self monitoring report indicating status of compliance to the conditions stipulated in the approval, to the state government and the concerned Regional Office of the Ministry.	HPPCL is committed to abide by and comply with the condition. Last compliance report has been submitted to MoEF, Regional Office Chandigarh on 10/12/2014 (**Annexure-III**).
17	All other conditions including standard conditions applicable to the proposals under Forest Conservation Act, 1980 and under different rules regulations and guidelines including Environmental Clearance and rehabilitation shall be complied with before transfer of forest land.	The same are being complied with.

2. Environment Clearance: Environment Clearance for the project was granted by MoEF vide F.no. J-12011/58/2007-IA-I, dated 19th May 2011 **(submitted with previous compliance report)**.

Conditions stipulated under Environmental Clearance	**Remarks**					
Part A- Specific Conditions						
(i) The following Catchment Area Treatment Plan , as proposed in the EIA/EMP Report shall be completed in 5 years-	Total of RS. 60.44 Crore has been deposited in Adhoc CAMPA account in lieu of CAT Plan for Shongtong Karchham HEP on dated 01/10/2012. No physical development has yet started.					
Treatment Measures	I Year	II Year	III Year	IV Year	V Year	Total
A) Biological Measures						
Afforestation/Gap plantation (ha)	81	80	80	80	80	401
Pasture Development (ha)	476	475	470	470	470	2361
Nursery Development (nos.)	5	5	-	-	-	10
B) Engineering Measures						
Step Drain (Rmt.)	57	57	57	57	57	285
Check Dams (nos.)	5	5	5	5	5	25
(ii) The details of the land holding of project affected persons whose land is being acquired shall be submitted to this Ministry. The benefits for the land losing households will be as per the National Rehabilitation and Resettlement Policy, 2007 (NRRP, 2007) or as per the State Rehabilitation and Resettlement Policy, whichever is higher. Adequate publicity for the compensation package shall be given in the affected villagers. All R&R Issues shall be completed before commissioning of the Project.	The benefits to the land losers will be as per Rehabilitation and Resettlement of HPPCL duly approved and notified by Govt. of Himachal Pradesh. The detail of land holdings of the land losers has been submitted to MoEF. **(submitted with previous compliance report)**. The Final Resettlement Plan of the project as per the policy/guidelines of ADB is being prepared.					
(iii) All commitments made during the public hearing shall be fulfilled completely.	All commitments made during the public hearing are being complied with.					

(iv) A scientific study from a reputed institute for deciding the minimum environmental flow to be released during the lean season should be undertaken. Till the study is completed, 20 % of the average flow of four consecutive leanest months of 90% dependable year shall be maintained as environmental flow. After the study is completed, whichever is higher figure shall be adopted.	The environmental flow assessment study has been conducted by NIH Roorkee. (**Annexure-IV**)
(v) The equipment likely to generate high noise level during the construction period or otherwise shall meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under Environment Protection Act. (EPA), 1986.	Acoustic enclosures on three no. DG sets have been provided.
(vi) Consolidation and compilation of the muck shall be carried-out only in the designated muck dumping sites, approved by the State Pollution Control Board. As per the proposed muck disposal plan given in your EIA/EMP, about 3.57Mm^3 Will be generated out of which 0.47 Mm^3 will be reutilized for back filling and 1.05 Mm^3 as construction material/protection works and remaining 2.04 Mm^3 shall be disposed off at 8 designated disposal areas. This shall be strictly implemented. The dumping sites shall be at least 30m horizontally away from the high flood level of the river.	Being complied with. The latest Muck Statement has been enclosed as (**Annexure-V**).
(vii) The proposed Compensatory Afforestation Programme on 128 ha. Of land with identified plant species @ 1500 plants per hectare shall be taken-up immediately. The allocated funds for this purpose shall not be diverted to any other purpose.	The cost for Compensatory Afforestation amounting to Rs. 1,74,65,952 has been deposited with HP Forests Department, GoHP.

(viii) Greenbelt development in 40 ha of land along the approach roads, residential areas, office complex, barrage site and other working areas with various native plant species shall be undertaken immediately. The allocated budget of Rs. 40 lakhs for this purpose shall not be diverted to any other purpose.	The same will be taken up with HP Forest Department shortly after the NH-5 widening work being completed by Border Road Organization and H.P.P.W.D is completed.
(ix) The revised Fisheries Management Plan submitted vide letter NO. HPPCL/ESMU-2/Shongtong/09-1658-61 dated 9th February, 2010 shall be undertaken in consultation with the Fisheries Department, Government of Himachal Pradesh. Breeding and hatching of indigenous fish i.e. Snow Trout will be carried out separately. The same shall also be followed in the proposed hatchery at Sangla with separate bays.	The 1st Instalment of Rs. 35.00 Lacs as desired by the Director - cum - warden of Fisheries, GoHP has been released. The status of Fisheries management plan has been sought from the fisheries department.2nd Instalment will be released after Utilization Certificate of 1st instalment is received (**Annexure-VI**).
(x) The proposed Wildlife Management & Development and Conservation of Biodiversity Plans at a cost of Rs. 764.50 lakhs shall be taken-up strictly as outlined in the EIA/EMP Report and implemented in consultation with the State Forest Department without any diversion of funds. A report of implementation shall be included in the sixth monthly compliance report to be submitted to the Ministry.	Letter in this context has been written to DFO, Kinnaur Forests Division and DFO (Wildlife), Sarahan on dated 18/09/2013.
(xi) About 1.5% of the total project cost shall be spent for the Local Area Development.	The condition is being complied with. Till date Rs. 10.54 Crore has been deposited as LADF (**Annexure-VII**).
(xii) Any other clearance from any other organization/department, if required shall be obtained.	Renewal of Consent to Establish from Himachal Pradesh State Pollution Control Board has been obtained till March 2015. The renewal for FY 2015-16 is under process.

Part-B General Conditions

(i) Adequate arrangement for providing free fuel like kerosene/wood /LPG shall be made for the labourers engaged in the construction work so that indiscriminate felling of trees is prevented.

Year/ Period	No. of Labourers engaged contract wise	Quantum of free fuel supplied or subsidy provided	Financial expenditure incurred (Rs.)
Till 31st Dec. 2014	115	138	250000/-

<table>
<tr><td>(ii) Medical facilities as well as recreational facilities shall also be provided to the labours.</td><td>One no. mobile Ambulance deployed in the project area.</td></tr>
<tr><td>(iii) Labourers to be engaged for construction work shall be thoroughly examined by. health personnel and adequately treated before issuing them work permit.</td><td><table>
<tr><th>Year/ Period</th><th>No. of Labourers medically checked contract wise</th><th>Financial expenditure incurred (Rs.)</th></tr>
<tr><td>Till 31st Dec. 2014</td><td>213 nos. (203 minor checkups and 10 First Aid)</td><td>43974</td></tr>
</table></td></tr>
<tr><td>(iv) No fugitive dust emissions should be observed at the construction sites. Water sprinkling arrangements shall be made to suppress the fugitive emissions.</td><td>The condition is being complied with. The DG sets have been provided with acoustic enclosures. Sprinkling water tanker has been deployed.</td></tr>
<tr><td>(v) Potable drinking water and proper sanitary facilities shall be provided for the labour force and the local area people.</td><td>The labour camp is under construction.</td></tr>
<tr><td>(vi) Restoration of construction area including dumping sites shall be ensured by levelling, filling up of burrow pits, landscaping etc. The area shall be properly treated with suitable plantation.</td><td>The plantation work will be taken up after the muck dumping has been completed. The gabion walls have been provided at each dumping site and are being strengthened by providing Cement Concrete Cladding.</td></tr>
<tr><td>(vii) Separate financial provision shall be made in the total budget of the project for implementation of the above suggested safeguard measures. The same shall be informed to the Ministry.</td><td>The condition has been complied with; separate provisions in EMP under various chapters/heads have been made for implementation of suggested measures.</td></tr>
<tr><td>(viii) Environmental parameters shall be monitored and six monthly monitoring reports shall be submitted to the Regional Office of the Ministry and State Pollution Control Board for their review.</td><td>The condition is being complied with. Last Six monthly report was submitted to the MoEF, Regional Office Chandigarh on dated 22/12/2014 (Annexure-VIII).</td></tr>
<tr><td>(ix) A Multi-Disciplinary Committee (MDC) to monitor environmental safeguards during the construction shall be constituted by the Ministry on the suggestions of the Proponent; Six monthly monitoring report of this Committee shall be displayed on the web-site of the Proponent.</td><td>An Ecological Monitoring Unit has been set up at Project Level with Divisional Forest Officer, Kinnaur as its Chairman.</td></tr>
<tr><td>(x) Videography of the project area shall be carried out to ascertain that no damage occurs to the houses of the villagers/local people and in case any damage occurs; the PP shall pay compensation for the damages.</td><td>The Videography of the entire Project Affected Area has been done along with water resources inventory. (submitted with previous compliance report)</td></tr>
</table>

The Project Proponent shall provide full cooperation and all required documents / data to the Officials of relevant Regional Office of MOEF who would be monitoring the implementation of environmental safeguards.	The condition is being complied with as and when required by MoEF.
Besides the above stated conditions, the Project Proponent and Government of Himachal Pradesh shall also implement all other environmental safeguards, as proposed in the EIA/EMP report and other reports from time to time.	The condition is being complied with. Details are at **Part-B**.
The environmental management plan shall be strictly adhered to and a sum of Rs. 843.891 Crores, the budgetary provisions for implementation of EMP shall not be diverted for any other purpose.	The condition will be complied with; the cost of EMP has increased due to HP Govt. notification regarding CAT Plan and Environment Monitoring Plan.
Any change in the scope of the project shall be intimated to the Ministry and fresh approval if required, shall be taken from the Ministry.	The presentation before the Environment Appraisal Committee has been held on 16th Oct 2014 at MoEF, New Delhi for revalidation of Environmental Clearance due to enhancement of installed capacity. The same is being pursued.
The Ministry reserves the right to add additional Safeguard measures subsequently, if found necessary and to take action including revoking of the clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.	Pertains to MoEF
This clearance letter is valid for a period of 10 years from the date of issue of this letter for commencement of construction work.	Pertains to MoEF
A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local body and the local NGO, if any, from whom any suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	The condition has been complied with (**submitted with previous compliance report**).

The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.enyfor.nic.in.	The condition has been complied with **(submitted with previous compliance report).**
After 5 years of the commissioning of the Project, a study shall be undertaken regarding impact of the project on the environment and downstream ecology. The study shall be undertaken by an independent agency, decided in consultation with the Ministry.	The condition will be complied with.
The Project Proponent shall submit six monthly compliance reports of the stipulated EC conditions and the monitoring data (both in hard copies as well by e.mail) to the respective Regional office of MoEF and the State Pollution Control Board. Both monitoring and compliance reports shall be up-loaded on the Web-site of the Proponent.	The condition is being complied with **(submitted with previous compliance report).**

3. Fulfilment of commitments made in Public Hearing-I&II:

Detail of issues raised during Public Hearing on 28.07.2009 and 29.07.2009 for Shongtong-Karchham HEP (Powari-Ralli), organized by H. P. State Pollution Control Board at village Powari and Ralli, Tehsil Kalpa, Distt. Kinnaur H.P. respectively:-

Sr. No.	Issues Raised at Powari	Remarks on the issue raised	Activities done
1.	The representative of the public raised an objection that project affected families indicated in R&R plan (rehabilitation and resettlement) is 158 whereas in the earlier R&R plan it was 438 and it was verbally assured by MD, HPPCL to include all 438 families in R&R plan. Therefore, till all the 438 families of Kalpa and Shudharang villages are not covered under project affected families the R&R plan should not be finalized.	This issue of R&R is under consideration of MD, HPPCL.	This issue of R&R is under consideration of MPP& Power Deptt., GoHP.
2.	Cremation ground near dumping No. 3 should be protected.	Project Proponent has assured that the cremation ground shall be protected.	No dumping has been done in DS no. 3 till date. The GP Shudharang has been consulted and the issue was discussed at Gram Sabha meeting on 04.01.2015. **(Annexure-IX)**
3.	Confluence point of Tangling Nallah and Satluj river is a holy place which is used for local rituals. Local people have traditional rights and it should be protected and the Confluence point should be developed properly by the project proponent.	Project Proponent has assured that Confluence point of Tangling Nallah and Satluj shall be developed. A bridge on Tangling Nallah has been proposed.	A bridge on Tangling Nallah has been strengthened.
4.	Local people have customary rights to collect forest produce such as herbs, medicine plants etc.	All the customary rights related to the forest produce will be protected	One of the Panchayat's, i.e. GP Powari has been given Rs. 3.00 crore in

	will be damaged and will affect the income source, therefore all the people of Distt. Kinnaur should be included in project affected families.	and every care will be taken so that there is no damage to the forest produce. In case some damage is observed the same shall be compensated by the Project Proponent.	lieu of Minor Mineral and the customary forest rights of the natives as the forest land has been diverted for the construction of the project. Full payment of Rs.6,68,31,250/- has been deposited with Member Secretary, LADC, Kinnaur for disbursement to GP Khawangi, Barang, Ralli and left over families of GP Powari.
5.	Studies on the affect on downstream projects due to desilting has not been done in EIA/EMP.	Project Proponent agreed to conduct studies.	Sedimentation Chambers four in nos. has been provided for desilting, so no impact on Down Stream projects is envisaged.
6.	Impact on water sources and biodiversity due to blasting during construction have not been indicated in EIA/EMP.	Project Proponent agreed to conduct studies.	Inventorisation of all the water sources in the project area along with Videography of the households has been done.
7.	Design of the project is on the bases of ten years data and viability of the project is not properly designed.	Project proponent clarified that viability of the project has been properly designed.	NIL
8.	Alignment of the power project has been indicated in the EIA/EMP (Figure No. 1) on the right bank of river Satluj where as in figure No. 2 it is shown on the left bank of the river Satluj.	It will be corrected by project proponent.	It has been corrected.
9.	In EIA/EMP para-7.5 page No. 7-18 it is mentioned that sand and grit has been collected by M/s JP Karchham Wangtoo Project from	Sand quarry/grit will be collected as per para- 7.5 page no. 7-18 near village	Sand quarry/grit will be collected from quarry site at village Powari which is in submergence area of

	village Jangi and the same query will be used by HPPCL but as a matter of fact this quarry has never been used by M/s J.P. Karchham Wangtoo Project, which indicates the negligent attitude of agency preparing EIA and as such the data given in EIA is doubtful.	Jangi.	the project.
10.	All the muck dumping sits indicated in the EIA/EMP is on the bank of river Satluj, which is in the flood zone area. In EIA/EMP design of dumping sits has not been shown. What will be the distance of dumping sits from HFL and what will be the angle of repose of muck has not been indicated.	Project . Proponent clarified that Muck will be dumped in safe designated dumping sites away from HFL and with adequate safe engineering structure so that there is no seepage of muck into river.	Muck management Plan as approved by MoEF is being implemented. Monthly muck statement is being submitted to HPSPCB every month.
11.	Due to construction of tunnels in Kinnaur, the fragile areas are being damaged which can be protected by the use of Tunnel Boring Machine as being used in Parvati Hydel Power Project in Kullu District. There is no mention of TBM in EIA/EMP. It was suggested that TBM should be used for construction of tunnels in Distt. Kinnaur.	It was assured by project proponent that if technically, it is possible, TBM can be used.	As per the Geological strata around the project area and the alignment of the project using TBM is not possible.
12.	Distt. Kinnaur is in Seismic zone - 4 and in the past Kinnaur has observed heavy earthquakes. Therefore, big projects should not come up in Kinnaur. In EIA/EMP seismic factor has not been taken in to consideration.	Seismically project has been designed.	The work for installation of five no. Seismographs in all the four Panchayat's has been completed.
13.	The existence of all the projects in river Satluj basin is in danger because of no international treaty with China on Satluj river. China	No comments.	NIL

	has constructed many big projects on Satluj basin and is planning to divert Satluj water to Eastern Tibet which is likely to affect the projects in future. All these aspects has not been mentioned in EIA/EMP.		
14.	Alternative suggestions have been given in EIA/EMP. Suggestion No. 1 to construct Dam at Shongtong and to construct tunnel on the right bank of river Satluj is the best option but it has been rejected because of Army Camp near to the proposed Dam. In view of environmental impact and to save property of local people, the suggestion No. 1 may be looked upon.	On the basis of technical studies conducted it was decided to construct HRT on the left bank of river Satluj.	NIL
15.	It is apprehended that the religious place, Kinner Kailash and Shivling will be damaged due to construction of Head Race Tunnel. In such an eventuality the religious sentiments of local people will be hurt and due to melting of glaciers on Kinner Kailash mountain flood situation can be observed. Whereas this aspect is not been addressed in EIA/EMP.	On the basis of studies conducted it was observed that Kinner-Kailash and Shivling are at sufficient height and there is to such threat to Kinner Kailash and Shivling.	The same has been submitted to MoEF while obtaining Environmental Clearance of the project.
16.	In view of the fact that number of big projects are coming up in Satluj basin and in the year 1988, 1993,1997, 2000 and 2005 devastating floods were observed in river Satluj, therefore study on cumulative impact is required and Disaster management plan should be prepared.	Project Proponent informed that disaster management plan shall be prepared.	Dam Break Analysis and Disaster Management plan has been prepared. **(submitted with previous compliance report)**

17.	2 % royalty should be given as per Gov. Of India National Hydro-Power policy 2008. Whereas instead of this in EIA/EMP only 100 unit free powers for 10 years has been mentioned. Provision of 2 % royalty should be made in R &R plan.	Project proponent informed that the issue is under consideration of state govt.	The state Govt. has ruled for 1 % royalty as per its norms.
18.	As per Himachal Pradesh hydro power policy 2006 provision 15 % release of water from the dam and to provide 70 % employment to the Himachali's have not been mentioned in EIA/EMP.	As per govt. notification 15% water will be discharged and 70% employment will be given to Himachalies.	Environmental flow assessment study has been conducted by NIH Roorkee as per the directions of MoEF.
19.	The detail of transmission line is not mentioned in EIA/EMP plan. It is also not mentioned whether there will be separate transmission line or it will be transmitted through integrated transmission line and separate environmental clearance will be obtained for transmission land.	EIA/EMP has been prepared on the bases of TOR approved by MoEF. Further it was clarified by project proponent that up to Wangtoo separate transmission line shall be provided and for transmission line environmental clearance is not required.	As per the latest notification from Govt. of India the transmission lines for the project above 250 MW will be done by Power Grid Corporation India Ltd. (PGCIL).
20.	In case the project is sold/transferred to any other company in such case fresh NOC of Gram Panchayat should be obtained.	Project proponent clarified that this project will not be sold/transferred to any other company.	It is submitted that the project has not been sold/transferred to any other company.
21.	Definition of main project affected family is not in accordance to the R & R policy of 2007 of Govt. of India.	It is as per R &R Plan approved by HP State Govt. vide letter No. Rev. (PC)A(10)-7/2008,dated 19.1.2009.	Followed up as per R &R Plan approved by HP State Govt.
22.	Base line date of Air quality of the area is mentioned in EIA/EMP but prediction of enhancement of Air pollution has not been given	Project proponent informed that studies will be conducted on this	The Air, Water and Noise pollution and prevention Acts are being strictly adhered with. The

	and impact on flora-fauna is also not mentioned in EIA/EMP.	issue.	Reports of Air, Water and Noise has been enclosed ad **Annexure-X.**
23.	Construction of tunnels and blasting operation will have adverse impact on water sources, is not mentioned in EIA/EMP and how it will be compensated should be made clear.	A committee comprising of members of Project Proponent, IPH and representative of concerned Panchayat will be constituted and documentation including Videography/ photography of the existing water sources shall be carried out, before starting the construction work. In case of reduction observed in the flow of water, it shall be compensated by the project proponent.	A committee comprising of members of Project Proponent, IPH and representative of concerned Panchayat was constituted and documentation including Videography/ photography of the existing water sources had been carried out, before starting the construction work. In case of reduction observed in the flow of water, it shall be compensated by the project proponent.
24.	Compensation for acquiring land should be through negotiation.	The project proponent agreed for negotiation.	Land has been acquired after negotiation with the land holders.
25.	Which area will be developed under CAT plan is not mentioned. Implementation of CAT plan should be prepared on annual basis and Implementation of CAT plan should be under taken consultation of local people/Panchayat.	Implementation CAT plan is to be done by forest department.	Total of Rs. 60.44 crore has been deposited in Adoch-CAMPA in lieu of CAT Plan.
26.	Health survey of workers should be conducted.	Agreed by project proponent.	Is being conducted.
27.	25 % employment should be given to the local people.	Employment will be provided to the local people in accordance to the notification of H.P. Government.	**Annexure-XI**

28.	All males above the age of 18 years should be treated a separate family and should be incorporated in R & R plan. As forest produce is likely to be destroyed due to construction of project, therefore, families which are depending upon forest produce for their livelihood should also be added in project affected families.	Project Proponent informed that there is no such provision in R & R plan approved by the State Govt.	NIL
29.	Due to submergence of sand / grits quarry in the project local people should be provided sand/grits and it should be made available through for next 40 years and there should be agreement between local people and project proponent.	Project proponent assured to give only free sand grit to construct two rooms set to each PAF.	Not started yet as the stone crushers are yet to be installed.
30.	RCC structure should be provided along the banks of reservoir in order to avoid land slide.	Project Proponent agreed to provide RCC structure along the banks of reservoir.	Will be taken up when after the diversion work completed.

Sr. No.	**Issues Raised at Ralli**	**Remarks on the issue raised**	**Status Till date**
1.	Dust from the construction of project is likely to pose serious health problems and will cause damage to orchards and crops which has not been indicated in EIA/EMP report, solution to this problem should be indicated in EIA/EMP	Mitigation measure to control dust due to construction of project have been suggested in EIA/EMP report, which has been assured by the project proponent to be implemented, so that water/air quality is kept within the prescribed norms and there is no damage to the orchards/crops and to the	Water tanker to control dust due to vehicular movement have been deployed.

		health of local people. Moreover, the same is also checked by HPSPCB time to time.	
2.	Two stone crushers are proposed to be established by the HPPCL. Mebar and Ralli villagers will be mostly affected. These villages should be properly compensated by the project proponent in case of damage caused by establishing stone crusher.	Project Proponent assured that pollution control measured as prescribed in EPA, 1986 shall be provided so as to keep pollution within the prescribed limit in case any damage is caused due to construction of project it shall be compensated by the project proponent.	Stone crushers are yet to be constructed.
3.	Muck should be dumped in proper and safe place adequately away from HFL.	Project Proponent clarified that Muck will be dumped in safe designated dumping sites away from HFL and with adequate safe engineering structure so that there is no seepage of muck into river.	The MMP has been approved by MoEF and is being followed up diligently.
4.	Tunnel Boring Machine (TBM) should be used for construction of underground works so that there is minimum damage in the project area.	It was assured by project proponent that if technically, it is possible, TBM can be used.	As per the Geological strata around the project area and the alignment of the project using TBM is not possible.
5.	Due to submergence of sand/grits quarry in the project local people should be provide sand/grits and it should damage available through for next 40 years and there should be agreement between local people and project proponent.	Project proponent assured to give only free sand grit to construct two rooms set to each PAF.	It has been assured to give only free sand grit to construct two rooms set to each PAF
6.	Provision for 2% royalty should be made in R&R plan as per	Project Proponent informed that this issue is	The state Govt. has ruled for 1 % royalty as per its

	Govt. of India National Hydel Power policy 2008.	under consideration of state govt.	norms.
7.	There are two water sources above villages Mebar and Ralli which are used for drinking as well as for irrigation. These sources are at the height of 10-11 thousand feet which is likely to be damaged due to construction of surge shaft. The project proponent should give in writing to provide water for drinking as well as for irrigation in case these sources are damaged due to construction of project.	A committee comprising of members of Project Proponent, IPH and representative of concerned Panchayat will be constituted and documentation including Videography/ photography of the existing water sources shall be carried out, before starting the construction work. In case of reduction observed in the flow of water, it shall be compensated by	A committee comprising of members of Project Proponent, IPH and representative of concerned Panchayat was constituted and documentation including Videography/ photography of the existing water sources had been carried out, before starting the construction work. In case of reduction observed in the flow of water, it shall be compensated by the Project proponent
8.	Compensation for acquiring land should be through negotiation by Deputy Commissioner Kinnaur.	The project proponent agreed for negotiation.	Land has been acquired after negotiation with the land holders
9.	Workers from other state employed in this project should not be allowed to vote in the elections.	Additional Magistrate informed that as per constitution of India, voting right can be exercised at only one place.	NIL

4. ADB Stipulations/ safeguarding measures (not covered above) : NIL

5. Others measures: NIL

C. STAFFING POSITION

Sr. No.	Reporting Aspect	Staff posted
1.	Environment Management Staff	Assistant Engineer (Environment)- One no.
2.	Social and R & R Management	Junior Officers (R&R) – Two nos.

STATUS OF ENVIRONMENT MANAGEMENT PLAN IN R/O SHONGTONG KARCHHAM HEP (450 MW) FROM 01/07/2014 TO 31/12/2014

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
1	**Compensatory Afforestation and Biodiversity Conservation Plan**						
	Compensatory Afforestation	16647259	17465952	HP Forest Deptt. – DFO. Kinnaur	CA was to be done in 128 Ha. Amount for CA has been deposited with HP Forest Deptt.	No Physical activity has been reported yet..	Status report has been sought from HP Forest Department.
	NPV	36830870	56960846	HP Forest Deptt. – DFO. Kinnaur	The cost of NPV has been deposited with HP Forest Deptt.	NIL	NIL
	Antipoaching Measures	12130000	0	HP Forest Deptt. – DFO. Wildlife, Sarahan	It includes Check Posts and salaryfor one R.O. and 9 Guards. Not taken up yet.	NIL	Will be taken up shortly with HP Forest Deptt.
	Cost of Trees	6470000	8545256	HPPCL & HP Forest Deptt. – DFO, Kinnaur	Marking of trees has been completed.	Demarcation of forest land has beer done.	
	Total	**72078129**	**82972054**				
2	**CAT Plan**						
	CAT Plan	**701950000**	**604416000**	HP Forest Deptt.	Total of Rs. 604.40 million has been deposited with Adhoc CAMPA, New Delhi.	Not Taken up Yet.	Refer Annexure-I
3	**Fisheries Managemnt Plan**						

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
	Fisheries Managemnt Plan	**22600000**	**3500000**	HP Fisheries Deptt.	In progress. UC for release of 2nd installment yet to be received.	Nil	Refer Annexure-VI.
4	**Public Health Delivery System**						
	Control of Malaria	**62300000**	43974	HPPCL/Contractor and State Aids Control Society (SACS)	Total of 213 nos. Laborers were medically checked.	203 minor checkup and 10 first aid	Under Process.
	HIV/AIDS Prevention and Management		0		One HIV/Awareness Cam proposed on 27th Nov. 2014.	NIL	The camp has been shifted to Jan, 2015 due to site visit of ADB/KFW officials.
	Development of Medical Facilities		1060000		One ambulance and dispensary deployed at project site.	NIL	Two dispensary/First Aid Posts has been made operational at Ralli and Tangling.
	Disposal of Biomedical Waste		0		The waste so generated is being dumped at designated diposal site.	NIL	
			1103974				
5	**Environment Management in Labor Camps**						

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
	Provision of Heating, Accomodation, Mess facility, Tranporation etc.	0	2209250	Contractor. However disposal sites will be identified in consultation with local admininstration	Labour camps under construction.	Till date four private building has been hired as temporary labour camps.	
	Provision of Water Supply	0	0		Two Borewells and Water Tanks have been provided on site.	NIL	
	Sanitation and Sewage Treatment Facilities	6200000	0		Not Taken up yet	NIL	The Labour Colony is under construction.
	Solid Waste Management	4350000	0		Not Taken up yet	NIL	
	Provision of Free Fuel	29670000	2500000		115 nos. of labourers engaged contract wise	**Total of 138nos. LPG cylinders provided till Dec 2014**	The free fuel is being provided by M/s Patel Engg. To the laborers.
	Police Post	20090000	0		Not Taken up yet	NIL	
		60310000	**4709250**				
6	**Muck Management Plan**						
	D1:max.quality to be dumped 349000 cum		0		No dumping has been done	NIL	
	D2:max.quality to be dumped 761645 cum		0		No dumping has been done	NIL	
	D3:max.quality to be dumped 237300 cum		0		No dumping has been done		

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
	D4:max.quality to be dumped 417900 cum	184,710,000	0	Contractor. However will be inspected by HPSPCB, HP State Forests Deptt., MoEF from time to time.	No dumping has been done	Work has been awarded for construction of retaining wall at DS 4. 4 PRW's engaged.	No dumping has been done. Work for construction R/Wall has not started yet.
	D5:max.quality to be dumped 115750 cum		9925381		Dumping is in progress.	Total of 15 PRW's engaged and 2149 crate wires erected.	
	D6:max.quality to be dumped 25750 cum		0		No dumping has been done	Nil	
	D7:max.quality to be dumped 111600 cum		0		No dumping has been done	NIL	
	D8:max.quality to be dumped 187300 cum		2241410		Dumping is in progress.	Total of 4PRW's engaged and 448 crate wires erected.	
	Total		**12166791**				
7	**Restoration and Landscaping of Construction Sites**						
	Restoration of borrow area						
	Filling up the land with soil	1000000	0	Contractor & HPPCL in consultation with HP	Not Taken up yet	NIL	Will be taken up after the mining
	Cost of green manure	400000	0		Not Taken up yet	NIL	
	Cost of sapling (10,000 saplings/ ha) @ Rs.5.00 per sapling	50000	0		Not Taken up yet	NIL	
	Cost of fertilizers and pesticides	400000	0		Not Taken up yet	NIL	
	Fencing with RCC pillars and barbed wire	300000	0		Not Taken up yet	NIL	

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
	Maintenance activities including cleaning of weeds @ Rs.50,000 for 5 years	250000	0	Forest Department	Not Taken up yet	NIL	has been completed.
	Digging of pits	100000	0		Not Taken up yet	NIL	
	Construction of garland drain	2000000	0		Not Taken up yet	NIL	
	Bench terracing	5000000	0		Not Taken up yet	NIL	
	Total	10500000	0				
	Landscaping and Restoration Plan	5000000	0		Not Taken up yet	NIL	
	Total	**15500000**	**0**				
8	**Environment Management in Road Construction**						
	Clearing and grubbing @ Rs.0.05 million/km for 6 km	300000		Contractor	Not Taken up yet	NIL	
	Provision of breast walls, construction of catch water and interceptor drains @ Rs.0.30 million/km for 6 km	1800000			Not Taken up yet	NIL	
	Provision of drainage system along roads @ Rs.0.14 million/km for 6 km	600000			Not Taken up yet	NIL	
	Roadside plantation, Jute matting etc. @ Rs.0.07 million/km for 6 km	420000			Not Taken up yet	NIL	
	Provision of water for spray @ Rs. 200/tanker for 50 tankers per day for a construction period of 200 days	2000000			Not Taken up yet	NIL	
	Compaction of Kutcha roads	2000000			Not Taken up yet	NIL	
	Total	**7120000**					
9	**Green Belt Development Plan**						

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
	Plantation in the area of 40 Hactares	**4000000**	**0**	HP Forest Department	Not Taken up yet	NIL	Will be taken up shortly after NH-5 widening and muck dumping has been completed.
10	**Control of Air Pollution**						
	Repair of roads during construction phase	2000000	0	Contractor and supervise by HPPCL and HPSPCB	Not Taken up yet	NIL	Startech Labs have been hired for Monitoring of Air, Water, Noise and Soil.
	3 Traffic managers @ Rs. 10,000 per month for 6 years including 10% escalation per year	2780000	88079		Not Taken up yet	NIL	
	5 sweeper @ Rs. 5.000 per month for 6 years including 10% escalation per year	2310000	0		Not Taken up yet	NIL	
	Provision for water spray @ Rs. 200/ tanker for 10 tankers per day for a period of 6 years (@ escalation of 1-0% every year)	5630000	0		Not Taken up yet	NIL	
	Total	**12720000**	**88079**				
11	**Control of Noise Pollution**						
	Construction of acoustic enclosure for DG sets	500000	0	Contractor and supervise by HPPCL and HPSPCB	Not Taken up yet	NIL	Acoustic enclosures provided to all DG's at all sites.
	Maintenance of DG sets	600000	0		Not Taken up yet	NIL	
	Total	**1100000**	**0**				
12	**Control of Water Pollution**						
	Settling Tanks at various construction sites	**3000000**		Contractor and supervise by HPPCL and HPSPCB	Not Taken up yet	NIL	
13	**R&R Plan***						

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
	Financial Assistance under standard R&R plan	16500000	30838900	HPPCL/Contractor	Under Process		
	Funds for R&R scheme	7800000	2473000		Under Process		
	Contingencies including compensation for unforeseen damages, devlopment works etc.	15000000	5988100		Under Process		
	Total	**39300000**	**39300000**				
14	**Environment Monitoring Plan**						
	Effluent from septic tanks	28080000	0	Himachal Pradesh State Pollution Control Board (HPSPCB)	Not Taken up yet	NIL	The Equipments for Monitoring is being purcahsed for furthur submission to HPSPCB for EMP.
	Water Quality (Surface)		0		Not Taken up yet	NIL	
	Water Quality (Groundwater)		0		Not Taken up yet	NIL	
	Water-related diseases		0		Not Taken up yet	NIL	
	Noise		0		Not Taken up yet	NIL	
	Air quality		0		Not Taken up yet	NIL	
	Meteorological aspects		0		Not Taken up yet	NIL	
	Environment Monitoring	4000000	4000000	Centre for Sceince and Environment, GoHP	Under Process	NIL	No information provided by the agency yet
	Total	**32080000**	**4000000**				
		1,218,768,129	**751196148**				
15	**Compensation due to loss of agriculture produce during construction phase**	10000000	0	HPPCL	Nil	NIL	No such claim has been demanded by the inhabitants of the area
16	**Consultancy for CDM**	5000000	0	HPPCL	Nil		

Sr. No.	Component	Budget Allocated in EMP	Budget Utilized	Implementation Agency	Status on date	Activities done	Remarks
17	Consent to Establish and its renewal	4500000	3420000	Contractor/HPPCL	In progress	Site visit done by Environment Engineer from HP State Pollution Control Board	Renewal fees for FY 2015-16 is under process.
	Total	1,238,268,129	755676148				
Note:	Additional amount of Rs. 13673737 for regenerating equivalent amount of degraded forest area in addition to Compensatory Afforestation as leveid by MoEF while Granting Stage-I, Foest Clearance has also been submitted to DFO, Kinnaur.						
	Grand Total		769349885				
	*The budget under R&R (point 13) has been shown as fully utilized and will be reported sepretaly after the finalisation of project RP.						

ANNEX - VI

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Kind attention to Rahul Sharma IFS

Proforma: CAMPA-2B
(CAT PLANS)
APO under Shongthong-Karchham CAT Plans for the Year 2014-15

Name of Division.	Name of CAT Plan	Name of Component	Name of Activity as per CAT Plan	Total targets as per CAT Plan Document		Targets Achieved up to 31.3.2014		Balance Targets to be Achieved		Detail of APO/Targets Proposed for 2014-15									Remarks.
				Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Name of Range	Name of Block	Name of Beat	Name of Area	Norm per unit	Phy. (Ha/ No.)	Amount (Rs.)	GPS location (In Deg.) Lat.	GPS location (In Deg.) Long.	
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Kinnaur	Shonthong-Karchham	Plantations	Normal plantation	34	3213000														
			Enrichment	21	4259000														
			Development of Chilgoza pine	71	10000000														
		Total Plantations		126	17472000	0	0	126	17472000										
		Dev. of Nursery	Nusery Developement	10	4300000	0	0	10	4300000	Kalpa	Kalpa	Kalpa	Kalpa Nry.	L/s	1	150000	31 32' 19"	78 15' 13"	
										Kalpa	Kalpa	R/Peo	Reckong Peo Nry.	L/s	1	150000	31 31' 39"	78 15' 30"	
										Kalpa	Kalpa	Pangi	Pangi Nry.	L/s	1	150000	31 35' 25"	78 15' 58"	
										Kalpa	Shongthong	Purbani	Purbani Nry	L/s	1	150000	31 35' 16"	78 18' 25"	
										Kalpa	Shongthong	Barang	Shongtong Nry.	L/s	1	150000	31 30' 59"	78 16' 03"	
										Moorang	Jangi	Rarang	Akpa Nry.	L/s	1	150000	31 35' 11"	78 22' 46"	
										Moorang	Jangi	Jangi	Jangi Nry.	L/s	1	150000	31 36' 37"	78 25' 42"	
										Moorang	Jangi	Lippa	Lippa Nry.	L/s	1	150000	31 38' 54"	78 24' 34"	
										Pooh	Kanam	Kanam	Kanam/ Surpo Nry.	L/s	1	150000	31 40' 31"	78 26' 55"	
										Pooh	Pooh	Dubling	Dubling Nry.	L/s	1	150000	31 44' 32"	78 37' 55"	
										Moorang	Ribba	Moorang	Moorang Nry.	L/s	1	150000	31 60' 63"	78 44' 74"	
										Moorang	Ribba	Ribba	Ribba Nry.	L/s	1	150000	31 34' 42"	78 22' 46"	
										Kilba	Kilba	Ralli	Ralli Nry.	L/s	1	150000	31 29' 49"	78 12' 42"	
										Kilba	Kilba	Kilba	Kilba Nursery	L/s	1	150000	31 30' 44"	78 08' 34"	
													Total Nry		14	2100000			

ANNEX - I

Name of Circle	Name of Division	Name of CAT Plan	Name of Component	Name of Activity as per CAT Plan	Total targets as per CAT Plan Document		Targets Achieved up to 31.3.2014		Balance Targets to be Achieved		Detail of APO/Targets Proposed for 2014-15									Remarks
					Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Name of Range	Name of Block	Name of Beat	Name of Area	Norm per unit	Phy. (Ha/ No.)	Amount (Rs.)	GPS location (In Deg.)		
																		Lat.	Long.	
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
			Soil & Water Conservation Works																	
				Land slide/slip		25950000	0	0	0	25950000	Pooh	Pooh	Pooh	Danbochhe slip-I	L/s	1	300000	31 45'37"	78 33'54"	
											Pooh	Pooh	Pooh	Danbochhe slip-II	L/s	1	300000	31 37'51"	78 29'19"	
											Pooh	Pooh	Pooh	Nabu Chakia Slip	L/s	1	400000	31 45' 11"	78 37' 20"	
											Pooh	Pooh	Dubling	Dakthel slip	L/s	1	400000	31 44'38.6"	78 38'34.1"	
											Pooh	Pooh	Namgia	Slip above Namgia	L/s	1	400000	31 48' 31"	78 39'26.1"	
											Kalpa	Kalpa	Pangi	Boktoo slip above NH-5	L/s	1	400000			
											Kalpa	Kalpa	Pangi	Boktoo below Pangi road	L/s	1	400000			
											Kalpa	Kalpa	R/Peo	Telangi slip below Pangi road	L/s	1	400000			
											Kalpa	Kalpa	R/Peo	Powari slide	L/s	1	400000			
														Total		9	3400000			
				Nalla Treatment		61450000	0	0	0	61450000										
											Moorang	Ribba	Ribba	Kanung Nalla	L/s	1	450000			
											Moorang	Ribba	Ribba	Shirmoling	L/s	1	400000	31 35'01"	78 20"00"	
											Moorang	Ribba	Moorang	Khokpa Nalla	L/s	1	400000	31 35'22"	78 27'10"	
											Moorang	Ribba	Moorang	Ramchang	L/s	1	400000			
											Moorang	Ribba	Rispa	Asmo Nalla	L/s	1	300000			
											Moorang	Ribba	Rispa	Aksong Nalla	L/s	1	450000			

Name of Circle	Name of Division	Name of CAT Plan	Name of Component	Name of Activity as per CAT Plan	Targets as per CAT Plan Document		Targets Achieved up to 31.3.2014		Balance Targets to be Achieved		Detail of APO/Targets Proposed for 2014-15									Remarks
					Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Name of Range	Name of Block	Name of Beat	Name of Area	Norm per unit	Phy. (Ha/ No.)	Amount (Rs.)	GPS location (In Deg.)		
																		Lat.	Long.	
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
											Moorang	Ribba	Rispa	Korispa Nalla	L/s	1	300000			
											Moorang	Ribba	Rispa	Khasskang Nalla	L/s	1	500000			
											Moorang	Ribba	Rispa	Tashonang Nesang	L/s	1	500000			
											Moorang	Ribba	Ribba	Nangahdon - II	L/s	1	500000			
											Moorang	Ribba	Ribba	Rulling Nalla-II		1	450000			
											Moorang	Ribba	Moorang	Keri Nalla	L/s	1	450000			
											Moorang	Ribba	Moorang	Domang chell Nalla	L/s	1	400000			
											Kilba	Karchham	Rally.	Yosel(Grat Nalla)	L/s	1	400000	31 29'25.6"	78 13'51:0"	
											Kilba	Karchham	Rally.	Gramang Nalla	L/s	2	600000	31 29'31.9"	78 13'53.5"	
											Kilba	Karchham	Rally	Bargar Nalla - I	L/s	3	400000	31 29'17.9"	78 14'02.7"	
											Kilba	Karchham	Rally	Vaspa Garang-II	L/s	4	400000	31 29'15.4"	78 13'35.6"	
											Kilba	Karchham	Rally	Bargar Nalla - II	L/s	5	250000	31 29'08.3"	78 14'02.6"	
											Kalpa	Kalpa	R/Peo	Shunati Nalla	L/s	1	400000			
											Kalpa	Shongthong	Tangling	Sharmi Nalla	L/s	1	300000			
											Kalpa	Shongthong	Barang	Barang Nalla	L/s	1	200000			
											Pooh	Pooh	Pooh	Bhagat Nalla-I	L/s	1	300000	31 43'58"	78 33'59"	
											Pooh	Pooh	Pooh	Bhagat Nalla-II	L/s	1	300000	31 44'59"	78 34'60"	
											Pooh	Pooh	Pooh	Bhagat Nalla-III	L/s	1	300000	31 46'48"	78 34'51"	
											Pooh	Pooh	Pooh	Bhagat Nalla-IV	L/s	1	300000	31 27'39"	78 21'42"	
											Pooh	Pooh	Pooh	Danbochhe Nalla	L/s	1	400000	31 45'52"	78 34'20"	

Sl. no.	Name of Circle	Name of Division.	Name of CAT Plan	Name of Component	Name of Activity as per CAT Plan	Targets as per CAT Plan Document		Targets Achieved up to 31.3.2014		Balance Targets to be Achieved		Detail of APO/Targets Proposed for 2014-15									Remarks.
						Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Name of Range	Name of Block	Name of Beat	Name of Area	Norm per unit	Phy. (Ha/ No.)	Amount (Rs.)	GPS location (In Deg.) Lat.	GPS location (In Deg.) Long.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
												Pooh	Pooh	Pooh	Gujungma Nalla	L/s	1	400000	31 45'50"	78 35'44"	
												Pooh	Pooh	Pooh	Pooh Nalla	L/s	1	400000	31 46'50"	78 34'48"	
												Pooh	Pooh	Dubling	Yogyur Nalla (Dubling)	L/s	1	400000	31 46'40"	78 36'56"	
												Pooh	Pooh	Dubling	Puwak Nalla	L/s	1	400000	31 45'01"	78 37'31"	
												Pooh	Pooh	Dubling	Shamlung Nalla-I	L/s	1	300000	31 44'43"	78 38'35"	
												Pooh	Pooh	Dubling	Sham lung Nalla-II	L/s	1	400000	31 29'46"	78 12'27"	
												Pooh	Pooh	Dubling	Yangti Nalla (Pharkha)	L/s	1	400000	31 44'48"	78 38'29"	
												Pooh	Pooh	Namgia	Khab naila	L/s	1	400000	31 47'18.01"	78 47'15.1"	
												Pooh	Pooh	Namgia	Tashigang Nalla-II	L/s	1	400000	31 35'46.3"	78 45'36.4"	
												Pooh	Pooh	Namgia	Kamlung Nalla -II	L/s	1	400000	31 48.6'45"	78 42.2'47"	
												Pooh	Pooh	Namgia	Rache slip -II	L/s	1	300000	31 48'31"	78 39'26.1"	
												Pooh	Pooh	Namgia	Phutan Nalla -II	L/s	1	300000	31 48'10.5"	78 39'19.9"	
												Pooh	Pooh	Namgia	Yaktosa slip -II	L/s	1	400000	31 48'39.4"	78 39.6'15"	
															Total		49	14950000			
					Vegetative Structures							Kilba	Karchham	Rally	Pu Nalla	L/s	1	400000	31 29'18.1"	78 12'36.3"	
												Kilba	Karchham	Rally	Ta Nalla	L/s	1	400000	31 29'21.5"	78 12'56.7"	
												Kilba	Karchham	Rally	Limkate Nalla /Slide	L/s	1	400000	31 29'24.0"	78 13'38.9"	
												Kilba	Karchham	Rally	Vaspa Garang Nalla	L/s	1	400000	31 29'20.0"	78 13'38.9"	
												Kilba	Karchham	Rally	Jakhang Naila	L/s	1	400000	31 29'30.9"	78 13'40.2"	
															Total		5	2000000			

Sl. No.	Name of Circle	Name of Division	Name of CAT Plan	Name of Component	Name of Activity as per CAT Plan	Targets as per CAT Plan Document		Targets Achieved up to 31.3.2014		Balance Targets to be Achieved		Detail of APO/Targets Proposed for 2014-15								Remarks
						Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Name of Range	Name of Block	Name of Beat	Name of Area	Norm per unit	Phy. (Ha/ No.)	Amount (Rs.)	GPS location (In Deg.) Lat.	GPS location (In Deg.) Long.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
					Civil Structure							Pooh	Pooh	Namgia	Thangzung	L/s	1	300000			
												Pooh	Pooh	Namgia	Manedung	L/s	1	200000			
												Pooh	Pooh	Namgia	Bukpha Phu	L/s	1	200000			
												Pooh	Pooh	Namgia	Tashingang (Lagongma)	L/s	1	200000			
												Pooh	Pooh	Namgia	Khikchark (Khab)	L/s	1	200000			
												Pooh	Pooh	Namgia	Ghatahng	L/s	1	100000			
															Total		6	1200000			
					River Bank stablization		5000000	0	0	0	5000000										
												Moorang	Ribba	Moorang	Skibba River Bank	L/s	1	500000			
												Moorang	Ribba	Rispa	Korispa River Bank	L/s	1	500000			
												Moorang	Ribba	Rispa	Haldo River Bank	L/s	1	450000			
															Total		3	1450000			
					Avalanche Control		22800000	0	0	0	22800000										
						Snow harvesting structure						Pooh	Pooh	Namgia	Above Namgia Village	L/s	1	500000			
															Total		1	500000			
					Van Sarovar		2500000	0	0	0	2500000					0	0	0			
				Total Soil & WC Works			117700000	0	0	0	117700000						73	23500000			
4				Infrastructure Development	Building repair		12175000	0	0	0	12175000										
				C/o Mali Hut at Rally								Kilba	Karchham	Rally	Rally	L/s	1	800000			
				Repair of Mali Qtr. at Kalpa								Kalpa	Kalpa	Kalpa	Kalpa	L/s	1	100000			

	Division.	Plan	Component	per CAT Plan	CAT Plan Document		up to 31.3.2014		be Achieved									GPS location (In Deg.)		
					Phy. (Ha/ No.)	ount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Name of Range	Name o Block	Name of Beat	Name of Area	Norm per unit	Phy. (Ha/ No.)	Amount (Rs.)	Lat.	Long.	
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
			Repair of Type -1 qtr. double storey at Kalpa								Kalpa	Kalpa	Kalpa	Kalpa	L/s	1	300000			
			Fencing of Range Office & Colony at Kalpa								Kalpa	Kalpa	Kalpa	Kalpa	L/s	1	300000			
			C/o recreatation room at Reckong Peo								Kalpa	Kalpa	R/Peo	R/Peo	L/s	1	300000			
			Repair of Fgd hut at Shogthong								Kalpa	Shongthong	Barang	Shongthong	L/s	1	150000			
			C/o Two Nos suits in FRH Pooh								Pooh	Pooh	Pooh	Pooh	L/s	1	2500000	31 35'37"	78 34'54"	
			C/o Fgd Hut Malling								Malling	Malling	Malling	Malling	L/s	1	800000	31 53'12.8"	78 37'44.0"	
			C/o B.O. Qtr Leo								Malling	Leo	Leo	Leo	L/s	1	500000	31 53'09.3"	78 35'52.3"	
														Total		9	5750000			
			Road & Path			4875000	0	0	0	4875000										
				Road to Range office Malling & Compound							Malling	Malling	Malling	Nako	L/s	1	500000	31 53'12.8"	78 37'44.0"	
				Mule Path from Khab Bridge to Namgia							Pooh	Pooh	Pooh	Namgia	L/s	1	300000			
				Path to Ghatang area							Pooh	Pooh	Pooh	Namgia	L/s	1	100000			
														Total		3	900000			
			Water Supply	Laying of Water Channel at Hange							Malling	Leo	Chulling	Huycu Nalla to Labra	L/s	1	200000	31 50'37.6"	78 34'06.8"	
													Total Water Supply			1	200000			
											Total Infrastructure Development					13	6850000			
				Vehicle and Operational Support		45700000	0	0	0	45700000										
				Purchase of Mahindra Scorpio							Division				L/s	1	1500000			
				Purchase of Multi Utility							Division				L/s	1	800000			
				Purchase of Computer with all accessories							Division				L/s	4	250000			
											Total Vehicle and Operational Support					6	2550000			

Sl. No.	Name of Circle	Name of Division.	Plan	Component	per CAT Plan	CAT Plan Document		up to 31.3.2014													
						Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Phy. (Ha/ No.)	Amount (Rs.)	Name of Range	Name of Block	Name of Beat	Name of Area	Norm per unit	Phy. (Ha/ No.)	Amount (Rs.)	GPS location (In Deg.)		
																			Lat.	Long.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
					Silt Monitoring		5500000	0	0	0	5500000							0			
				Total Infrastructure Development			68250000	0	0	0	68250000							0			
				Wildlife related activites	Wildlife measures		26128000	0	0	0	26128000							0			
6				Other Activities	Payment of Environmental services		20000000	0	0	0	20000000							0			
					Research, Training & Capacity build up, Publicity & awareness. Documentation		100000000	0	0	0	100000000							0			
					Forest Protection.		2550000	0	0	0	2550000							0			
					Monitoring and Evaluation		7600000	0	0	0	7600000							0			
					Site specific Work Plan (Micro planning).		8500000	0	0	0	8500000							0			
					Contigencies		17500000	0	0	0	17500000							0			
					Other (Not specified in CAT Plan document)		214000000	0	0	0	214000000							0			
Total of Shongthong-Karchham CAT Plan for the year 2014-15							604000000	0	0	136	604000000							35000000			

Divisional Forest Officer,
Kinnaur Forest Division at
Rekong Peo. 172107

Annex-II

(1/3)

HIMACHAL PRADESH POWER CORPORATION LTD.
(A State Government Undertaking)

No. HPPCL/CP/DOE/VOL- II /2014-14534-35 Dated: 29/11/14

To

1. **The General Manager, Shongtong Karcham HEP, HPPCL, Reckong-peo, Distt. Kinnaur (HP).**
2. **The General Manager, Kashang HEP, HPPCL, Reckong - peo, Distt. Kinnaur (HP).**

HPPCL 2418 3/12/2014 Reckong Peo Kinnaur

Sub: Public Consultation Meetings on 08.12.2014 at Reckongpeo and on 09.12.2014 at Pooh – Office order thereof.

Sir,

Please find attached a copy of office order dated: 17.11.2014 issued by the Pr.Secretary (MPP&Power), Govt. of HP vide which it has been intimated that as per the recommendations of MoEF, GoI, Govt. of HP has awarded the work of study for cumulative or aggregate ecological impact of all the Hydro Projects in operation, under execution and planned for implementation in future to ICFRE, Dehradun and in order to have complete transparency in this process public consultation meetings have been fixed to be held on 08.12.2014 at Reckongpeo and on 09.12.2014 at Pooh.

G.M.
A.G.M.
F&A
C&A
P&C
R&R
M-I
M-II

The Directorate of Energy, GoHP has been authorized to hold these consultation meetings. It is, therefore, requested to extend all help to the Directorate of Energy for the aforesaid purpose.

This for information and necessary action please.

DA: As above

780 9/12 Reckong Peo

Yours faithfully,

General Manager (CP) 29/11

Registered Office:HPPCL, Himfed Bhawan, Panjri, (Below old MLA Quarters), Shimla
Ph. No:0177- 2633816, Fax No: 0177-2633920
CIN:U40101HP2006SGC030591

GOVT. OF HIMACHAL PRADESH
Department of Multi Power Projects and Power
Tel No: 0177-2621897, Fax No: 2880769, E-mail- secypower-hp@nic.in

Office Order

On the recommendations of MOEF Govt. of India, Govt. of Himachal Pradesh is getting a study conducted for cumulative or aggregate ecological impact of all the Hydro Power Projects in operation, Under Execution and Planned for implementation in near future in Satluj Basin of Himachal Pradesh and study has been awarded to Indian Council of Forestry Research and Education (ICFRE) Dehradun.

In order to have complete transparency in the process of Cumulative Environment Impact Assessment Study two Stakeholders & Public Consultation Meetings have been fixed to be held on 8th December 2014 at Reckong Peo and on 9th December 2014 at Pooh. In order to organize these meetings Director and Chief Engineer (Energy), Directorate of Energy, GoHP are hereby authorized to hold the said Consultation Meetings in the public interest.

Director (Elect.) Dy. No. 8458 Dated 24/11/14

Principal Secretary (MPP & Power)
Govt. of Himachal Pradesh, Shimla- 02

NO. HPDOE/CE (Energy)/Satluj Basin/2014- 7390-99 **Dated:** 17/11/2014

Copy to :-

A] The Director, Directorate of Energy Shanti Bhavan New Shimla -171009 for information and necessary action please.

2) The Director, Department of Environment, Science & Technology, Paryavarn Bhawan near US Club, Shimla-171001 for information and necessary action please.

3) The Chief Engineer (Energy), Directorate of Energy Shanti Bhawan, New Shimla – 171009 for information and necessary action please.

1. The Chairman –cum- Managing Director SJVNL, Himfed Building, New Shimla – 171009 for necessary action and active participation with Directorate of Energy for the same purpose
2. The Managing Director, HPPCL, Himfed Bhawan Panjiri, below old MLA Quarters, TutiKandi, Shimla-171005. He is requested to issue the necessary direction to the fidd formation at Reckong Peo and at Pooh to extend all help to Directorate of Energy for the same purpose.
3. The Managing Director, HPSEB Ltd, Vidyut Bhawan,Shimla-171004 for necessary action and active participation with Directorate of Energy for the same purpose.
4. The Managing Director, HPPTCL Ltd, Barowalia House,Shimla-171002 for necessary action and active participation with Directorate of Energy for the same purpose.
5. The Principal Chief Conservator of Forests, Himachal Pradesh Forest Department, Talland, Shimla-171001 for necessary action and active participation with Directorate of Energy for the same purpose.
6. The Deputy Commissioner Kinnaur at Reckong Peo, District Kinnaur (H.P) for necessary action and active participation with Directorate of Energy for the same purpose.
7. Er.C.M. Walia ,The Secretary General Forum of the Hydro Power Producer (HPPF) Top Floor Uttam Bhawan (Dogra Lodge), Near 103 Tunnel, Shimla-171004 for information and necessary action please.

Chief Engineer (Energy)
Directorate of Energy
GoHP, Shimla -09

Annex-III

Himachal Pradesh Power Corporation Limited
(A State Government Undertaking)
Shongtong-Karchham Hydro Electric Project, Reckong-Peo
Phone: - 01786-222310, 222962, 222801, Fax:-01786- 223174, Email: - skhep.hppcl@gmail.com

No. HPPCL/GM-SKHEP/ Forest-VII /2014- 6278-82 Dated: - 10/12/2014

To

The Director (S),
Ministry of Environment and Forests (GOI),
Northern Regional Office,
Bays No. 24-25, Sector 31-A,
Dakshin Marg, Chandigarh-160030

The Principal Chief Conservator of Forest,
Himachal Pradesh Forests Department,
GoHP, Talland, Shimla-1.

Subject: - **Reg. Annual Self Monitoring Report of Shongtong-Karchham Hydro Electric Project, Himachal Pradesh Power Corporation Limited (HPPCL) in Kinnaur Forest Division in Kinnaur District of Himachal Pradesh.**

Dear Sir(s),

This is in reference to your MoEF, F.no. 8-78/2010-FC, dated 14th Nov. 2012 vide which Forest Clearance was granted for diversion of 63.5015 Ha. of forest land in favour of HPPCL for the Construction of 402 MW Shongtong-Karchham Hydro Electric Project in Kinnaur Forest Division in Kinnaur District of Himachal Pradesh.

In this context, as per the condition no. 16 of the Forest Clearance please find enclosed the annual self monitoring report indicating the status of compliance to the conditions stipulated in the approval, for your kind information.

Yours faithfully,

10/12/2014

Encl: As above

S/C

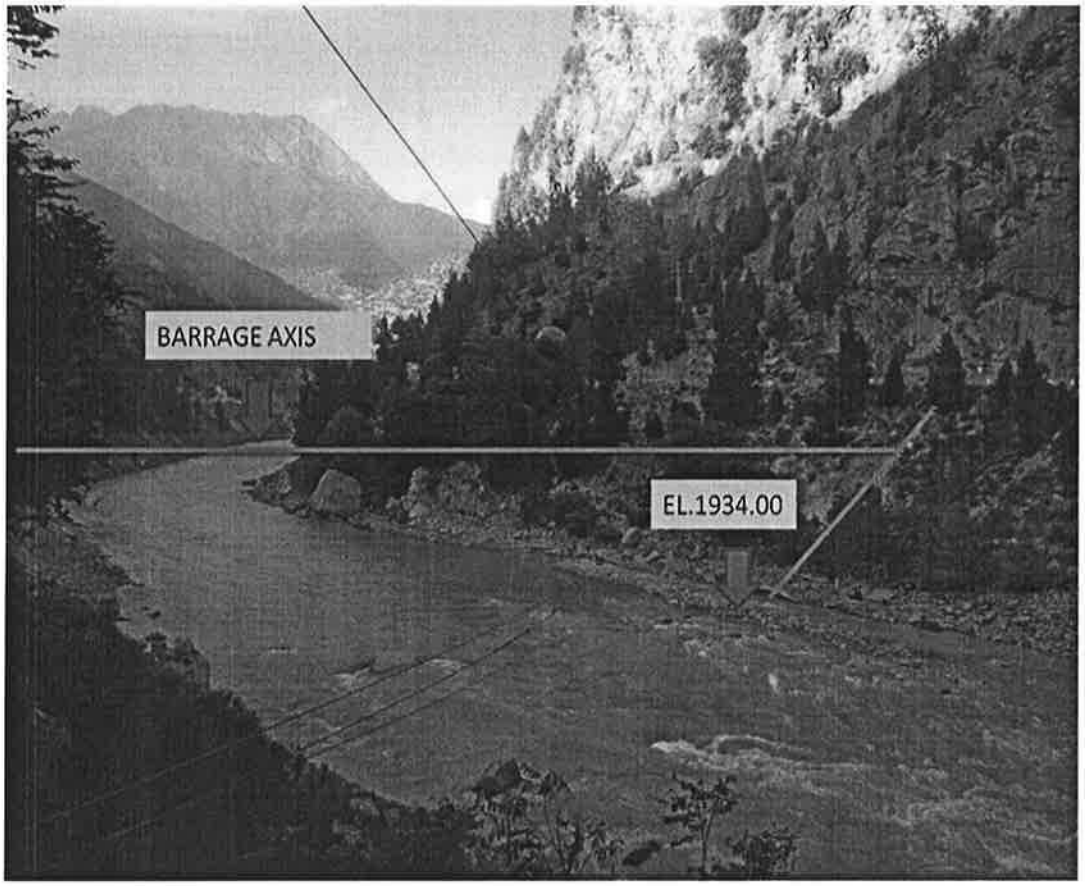
Copy forwarded to the following for information:-

1 The Director (Civil), HPPCL, Himfed Bhawan, Panjri, Tutikandi, Shimla-05.
2 The Chief Environment Specialist, Uttam Bhawan (Dogra Lodge), Near 103 Tunnel, Shimla-4.
3 The Divisional Forest Officer, Kinnaur Forest Division, Kinnaur at Reckong Peo.

Annex - IV

Annexure-15.1

Assessment of Environmental Flow Requirements in River Satluj at Shongtong Karcham Project Site



National Institute of Hydrology
Roorkee

PREFACE

Environmental flow refers to the quantity of water considered to be adequate for protecting the structure and function of an ecosystem and its dependent species. It means adequate qantity of water should be available in the rivers, to ensure downstream environmental, social and economic benefits. Environmental flow is compromised between the development and the ecology of the river and its assessment is required for the sustainability of the ecosystem. The two broad categories of the environmental flow assessment methods are considered which include detailed environmental flow assessment method and the desktop environmental flow assessment method.

National Institute of Hydrology, Roorkee has been actively involved in carrying out R & D studies in the area of Environmental Flow Requirement and Low Flow Analysis. Institute has carried out a number of scientific studies which includes few sponsored/consultancy projects by NTPC, NHPC and IIT Roorkee. HPPCL (Himachal Pradesh Power Corporation Limited) had requested the Institute to take up the Environmental Flow Requirement at Shongtong Karcham project site. In this study, the Environmental Flow Requirement for the Shongtong Karcham site using hydraulic method has been assessed. The study has been carried out by Dr Manohar Arora, Scientist D of Surface water hydrology division. I hope that the results of the project would be very much useful for the sustenance of the ecosystem in the Himalayan region in general and for the Satluj River between Shongtong and Karcham in particular.

January 12, 2015
Roorkee

(R. D. Singh)
Director

Abstract: The environmental flow is the required amount of water to flow downstream to maintain the life, circulation and reproduction of aquatic species. It is an important aspect in the development of hydropower projects. The objectives are defined considering an accepted level of degradation, and generally focus on specified, valuated features of riverine ecosystem. Depending on the conservation objectives, the target biota, environmental flow release will correspond to a single minimum flow value for each seasonal flow regime. The two broad categories of the environmental flow assessment are the detailed environmental flow assessment method and the desktop environmental flow assessment method. Both the methods are further divided into several categories out of which it is the Desktop Analysis that is used mostly. All the methodologies still needs some modifications as these methodologies are not global and are data intensive.

Satluj River is one of the major Himalayan Rivers identified as a main source of hydro electric power by the Government of India as well as the State of Himachal Pradesh. Shongtong-Karcham HEP is being conceived as a run-of-the river scheme between Powari and Ralli, Village reach of Satluj river in District-Kinnaur, Himachal Pradesh. The purpose of the study is the assessment of Environmental Flow Requirement using the hydraulic rating and habitat simulation methodology in the above affected reach of the river post construction of the project for the sustenance of riverine ecosystem.

CHAPTER 15
ENVIRONMENT FLOW REQUIREMENT

15.1 INTRODUCTION

The environmental flow refers to the quantity of water considered to be adequate for protecting the structure and function of an ecosystem and its dependent species. It means adequate quantity of water should be available in the river to ensure downstream environmental, social and economic benefits. The objectives are defined considering an accepted level of degradation, and generally focus on specified, valuated features of riverine ecosystem. Depending on the conservation objectives, the target biota, environmental flow release will correspond to a single minimum flow value for each seasonal flow regime. The two broad categories of the environmental flow assessment are the detailed environmental flow assessment method and the desktop environmental flow assessment method. Both the methods are further divided into several categories out of which it is the Desktop Analysis that is used mostly. All the methodologies still needs some modifications as these methodologies are not global and are data intensive.

Satluj River is one of the major Himalayan Rivers identified as a main source of hydro electric power by the Government of India as well as the State of Himachal Pradesh. Shongtong-Karchham HEP is being conceived as a run-of-the river scheme between Powari and Ralli Village reach of Satluj River in District-Kinnaur, Himachal Pradesh. The purpose of the study is the assessment of Environmental Flow Requirement using the hydraulic rating and habitat simulation methodology in the above affected reach of the river post construction of the project for the sustenance of riverine ecosystem.

National Institute of Hydrology, Roorkee has been actively involved in carrying out R & D studies in the area of Environmental Flow Requirement and Low Flow Analysis. Institute has carried out a number of scientific studies which includes few sponsored/consultancy projects by NTPC, NHPC and IIT Roorkee. HPPCL (Himachal Pradesh Power Corporation Limited) had requested the Institute to take up the Environmental Flow Requirement at Shongtong Karchham project site. In this study, the Environmental Flow Requirement for the Shongtong Karchham site using hydraulic method has been assessed.

The detailed study has been conducted by National Institute of Hydrology, Roorkee and has been enclosed as **Annexure-15.1**.

Introduction:

Environmental flows are required to be maintained through a river reach for sustaining its ecosystem and dependent species . It means enough water is to be released in the downstream of the river system after utilizing the water for the development projects in order to ensure downstream environmental, social and economic benefits. Realizing its importance, several countries have made ensuring environmental flows mandatory. For example, The Mekong River Agreement, 1995; South Africa's National Water Act, 1998 and the Swiss Water Protection Act, 108. These legislations attempt to ensure required minimum flow in the river system to sustain ecosystem services.

As mentioned above, there are number of methods for the computation of environmental flows. It has been observed from the literature that different methods are used in different countries considering the various flow regimes. There are four main group [Pyrce, 2004] of methods: Those are

a) Hydrological methods

b) Hydraulic rate methods

c) Habitat simulation methods

d) Holistic methods

In hydrological methods, the daily or monthly flow data series are analysed to provide the information about environmental flows. In addition, this method can be used to calculate a minimum flows for the gauged as well as ungauged streams. Furthermore, it is easier to apply the hydrological method in the planning stage itself of the water resources development project. Hydraulic, habitat and holistic methods are capable of providing more detailed knowledge for the environmental flows in the streams. However, the requirement of extensive data base and efforts needed for collective the detailed information about the flow regimes, streams and the catchment restricts the applications of those methods. The main characteristics of the different methods are summarised as below:

A) HYDROLOGICAL METHODS

- Environmental flow is calculated by using daily and monthly measurement values.
- The results may not be very precise but they can be obtained in short time.
- This method is accepted to be convenient for planning stage of a water related projects.
- The most widely used method is the Tennant (or modified Tennant) method.
- The second most widely used method include various flow duration exceedance percentiles (e.g. Q95, Q75) or single low flow indices (e.g. 7Q10, 7Q2).

Where Q95 and Q75 represent 95% and 75% dependable flows respectively whereas 7Q10 and 7Q2 represent 7 day 10 year return period and 7 day 7 year return period low flows respectively.

B) HYDRAULIC RATING METHOD

- This method uses changes in hydraulic variables (such as river stage or wetted perimeter) to assess the habitat factors known or assumed to be limiting to target biota, thus a threshold value of the selected hydraulic parameter will sustain biota/ecosystem integrity.

C) HABITAT RATING METHOD

- These methods attempt to assess environmental flow requirements on the basis of detailed analyses of the suitability of instream physical habitat under different flow conditions using integrated hydrological, hydraulic and biological response data.
- Flow is typically modelled using data on flow depth, channel slope, cross section shape, etc. collected at multiple cross-section within a study reach.
- The results usually take form of habitat-discharge curves to predict optimum flows as environmental flow requirements.

D) HOLISTIC METHOD

- The requirements of the complete ecosystem are integrated and considered (including the river channel, source areas, riparian zone, floodplain, etc.).
- The natural regime of the river is the fundamental guide and must be incorporated into the modified flow regimes.

- Critical flow criteria are identified for some or all major components of the riverine ecosystem.
- The basis for most approaches is a systematic construction of a modified flow regime on a month by month and element by element basis which defines features of the flow regime to achieve particular ecological, geomorphological, water quality, social or other objectives of the modified system.
- Advanced holistic methods routinely utilize several of the tools found in hydrologic, hydraulic and habitat rating methods.

Figure 1 Illustrates a chart showing various Environmental assessment methods.

Shongtong-Karcham HEP is being conceived as a run-of-the river scheme between Powari and Ralli, Village reach of Satluj river in District-Kinnaur, Himachal Pradesh. The purpose of the study is the assessment of Environmental Flow Requirement in the above affected reach of the river post construction of the project for the sustenance of riverine ecosystem.

Objective of the study:

The main objective of the study is to estimate the environmental flows in Satluj River d/s of the Shongtong Karcham project site for maintaining its ecosystem and dependent species during the post project period. In this regard, the data/information provided by HPPCL are analysed using the hydrologic methods.

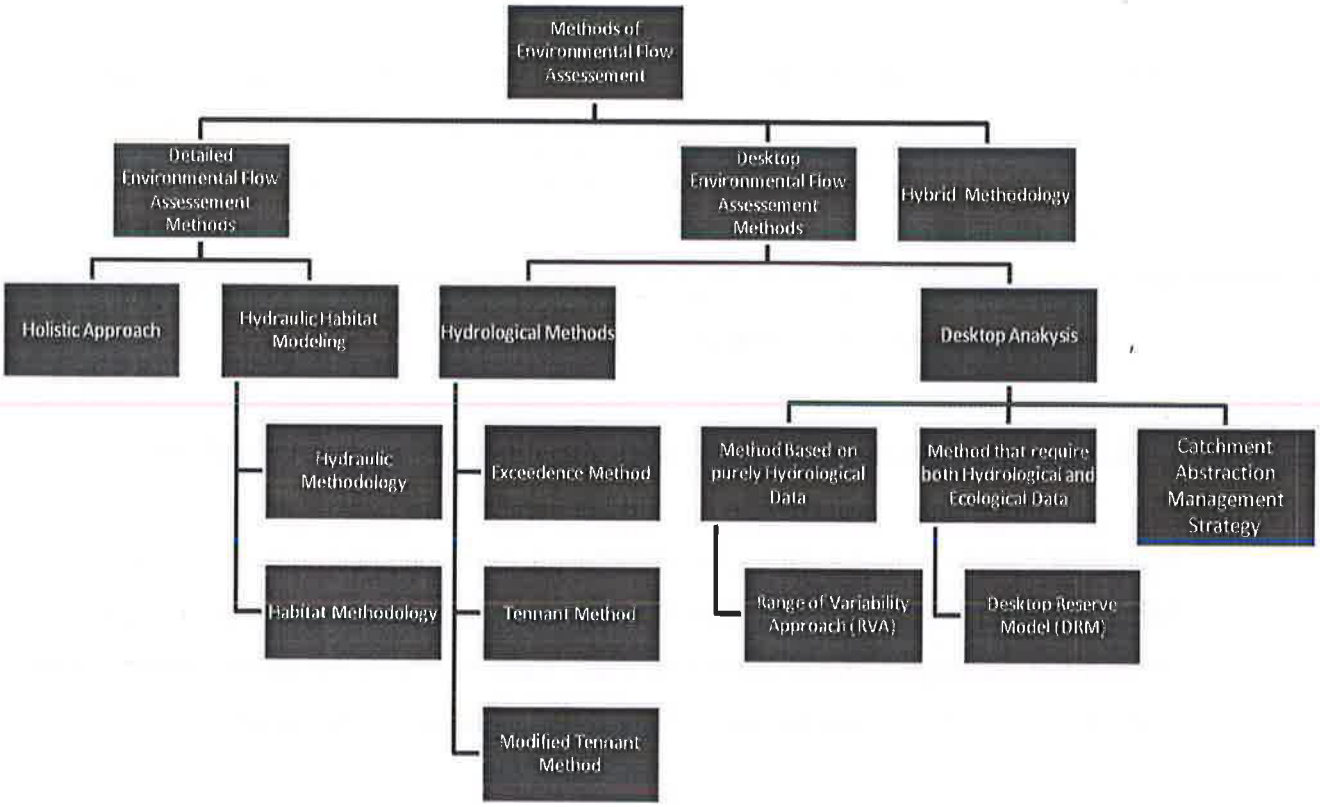


Figure 1: Chart showing Environmental Flow Assessment Methods

Salient Features of Shongtong Karcham project:

The Shongtong Karcham Hydro-Electric Project is run-of-the river scheme on the main Satluj River, in the reach between Karcham and Shongtong villages. Along Satluj, the diversion site of the project is proposed at about 77 km d/s of Ship Kila and about 35 km u/s of Nathpa dam of the Nathpa Jhakri project. Catchment area upto Shontong barrage site is 47132 Sq. Km. The long term discharge series at Shongtong barrage site has been developed on proportionate catchment area basis from the observed discharge series at Rampur and corrected observed/discharge series at Khab as follows:

$Q_{Shongtong} = Q_{Khab} + (Q_{Rampur} - Q_{khab})$*(CA between Khab and Shongtong/CA between Khab & Rampur)

Figure 2: Shongtong-Karcham HEP a run-of-the river scheme between Powari and Ralli, Village reach of Satluj river in District-Kinnaur, Himachal Pradesh

Data/Information available for the study:

HPPCL has made available the following data/information for carrying out the study :

1. Computed Ten Daily discharge data of Satluj River at Shongtong (cumec) from 1971 to 2006.
2. Observed Ten Daily discharge data of Satluj River at Rampur (cumec) from 1971 to 2006.
3. Computed Ten Daily discharge data of Satluj River at Powari (cumec) from 1997 to 2011.
4. Observed Ten Daily discharge data of Satluj River at Ralli (cumec) from 2009 to 2011.
5. Detailed Project Report VOLUME - I : Engineering

Methodology:

In this study basin, a combination of hydraulic rating methodologies and habitat simulations have been used. The primary reason for applying this method is its objectivity, availability of data including river cross-sections and better applicability to quantify the environmental flow in a scientific manner. Normally in case of hydro power projects in Himalayas the water is again discharged into rivers after power generation. Hence, hydraulic rating cum habitat simulation methodology can be considered a better approach in conjunction with other methodologies.

Environmental flow regime has been worked out keeping annual occurrence of following main season in this region. These are:

(a) Season I: This season is considered as low or lean or dry flow season which covers the months from December to March.

(b) Season II: It is considered as high flow season influenced by monsoon. It covers the months from June to September.

(c) Season III: This season is considered as average flow period, covers the months of April, May and October, November.

Geometric data (River cross sections)

The critical reach of river for any hydro electric project is the river reach between dam site and TRT outfall of the project due to diversion of flow from the intake of the project. In this reach of the river there may be number of small Nalla joining the main river. Hence, the most critical river reach for estimating the environmental flow release is the reach of river from the dam site of the project till the confluence of first major Nallah/stream. In this reach of river the available discharge will be only the environmental flow release from the respective hydroelectric project. To estimate the hydraulic parameters of river for different flow conditions, this reach of the river for each project has been represented in one dimensional mathematical model HEC-RAS through a close grid of river cross sections. The river reaches in the present study are the mountain streams with steep bank

and bed consisting of cobbles and large boulders, where the normal value of Manning's n can be adopted from 0.040 to 0.050. As the depth of water for a given discharge will be more for a higher value of manning's n, hence, to get a conservative estimate of water depth the Manning's n has been adopted as 0.040.

Assessment of Environmental Flow Releases from Shongtong Karcham HEP in Satluj basin of Himachal Pradesh

The layout of river network in HEC-RAS model and the longitunal profile are shown in Figure 3 & 4 respectively. The HEC-RAS model set up used for estimating hydraulic parameters like depth of flow, top flow width and velocity of flow corresponding to different percentage releases of the flow for the three seasons in 90% dependable year is shown in Figure 5. The water surface profiles at different cross sections for different seasons are shown in Figure 6 ((a) – (k)). The flow of Satluj river during the different seasons of 90% dependable year is shown in Table 1. The estimated flow parameters for some of the release conditions are given in Table 2.

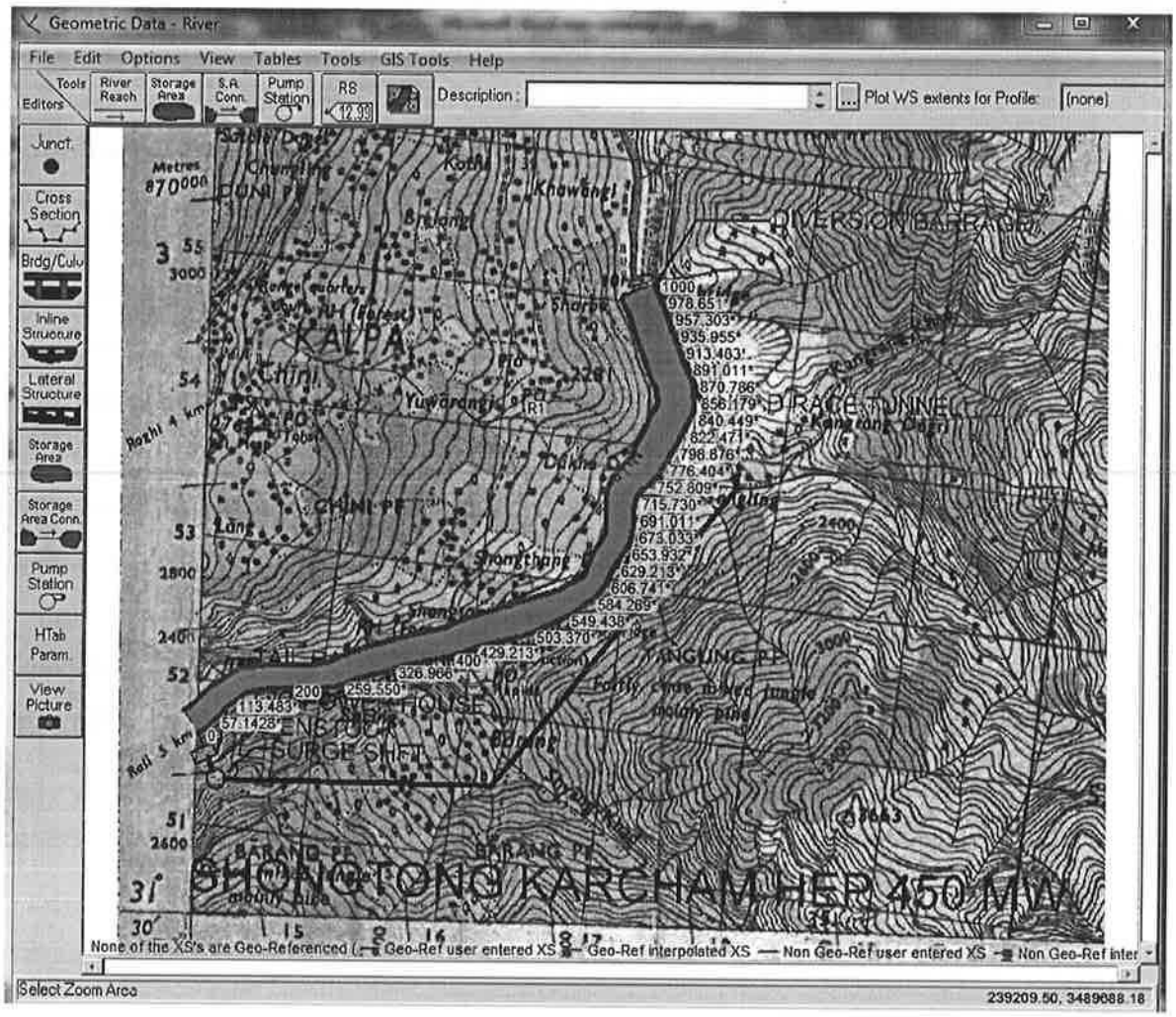


Figure 3: Layout of river network in HEC-RAS model.

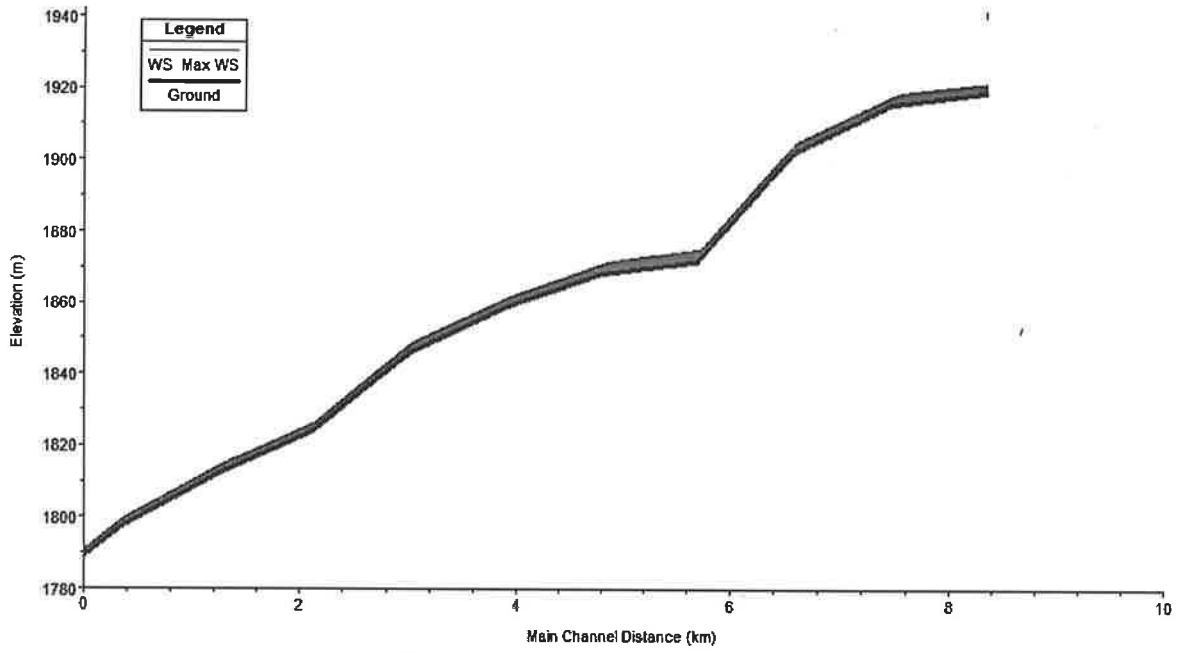


Figure 4: Longitudanl Profile of river.

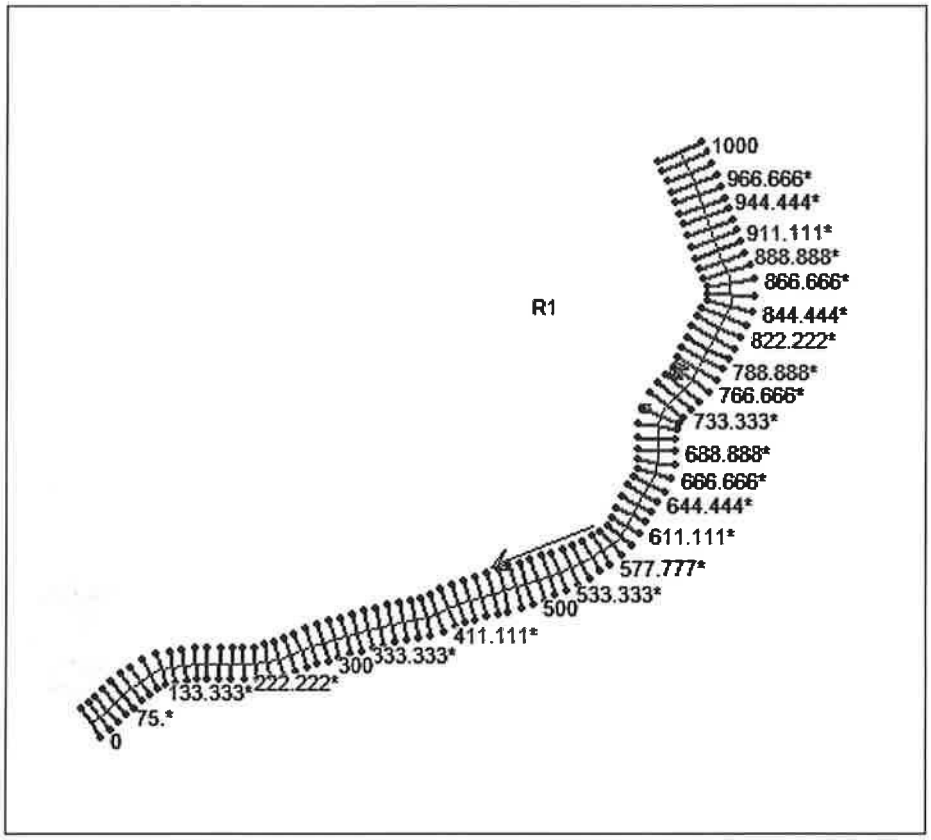
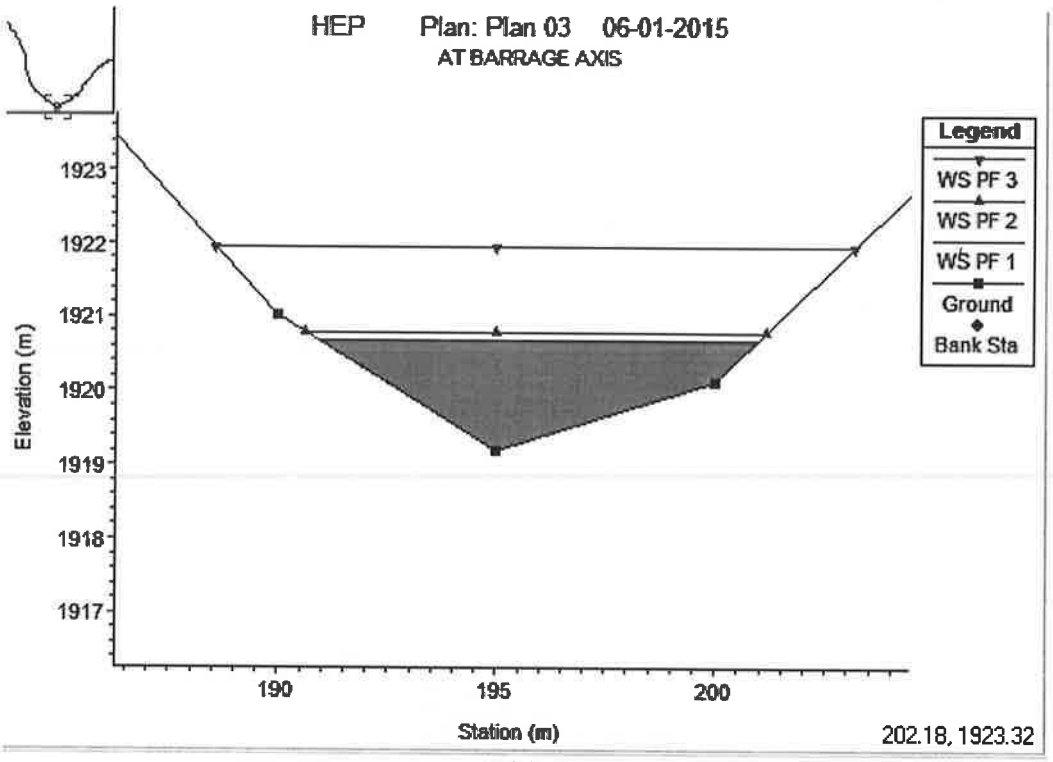
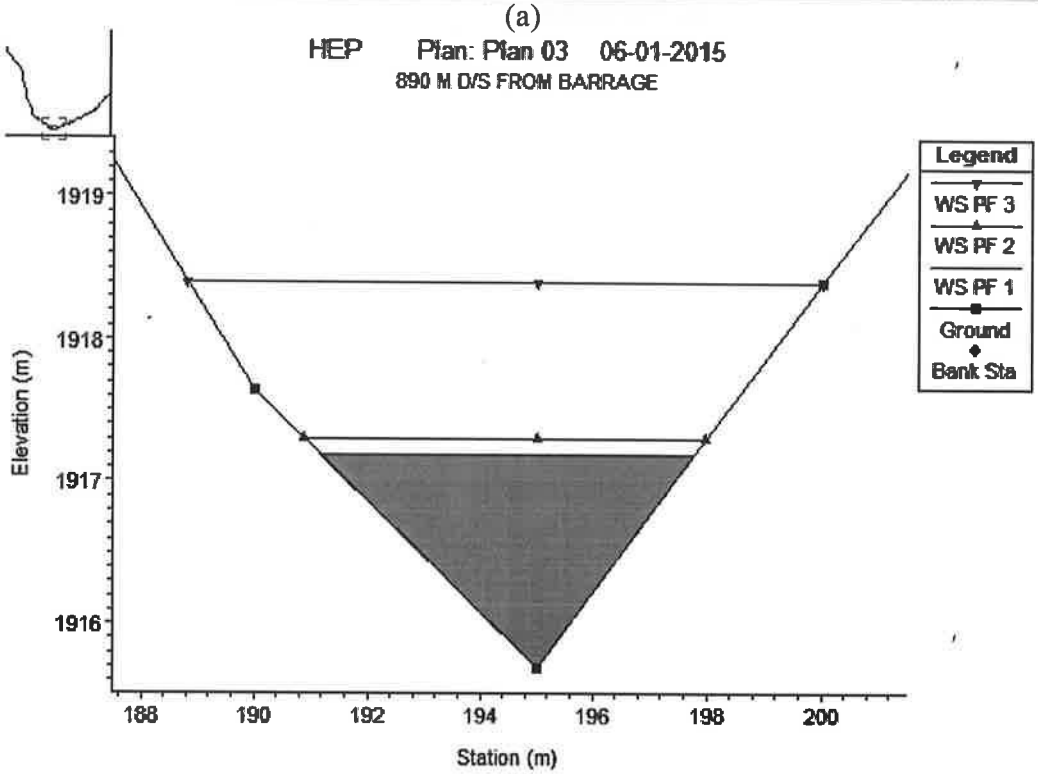


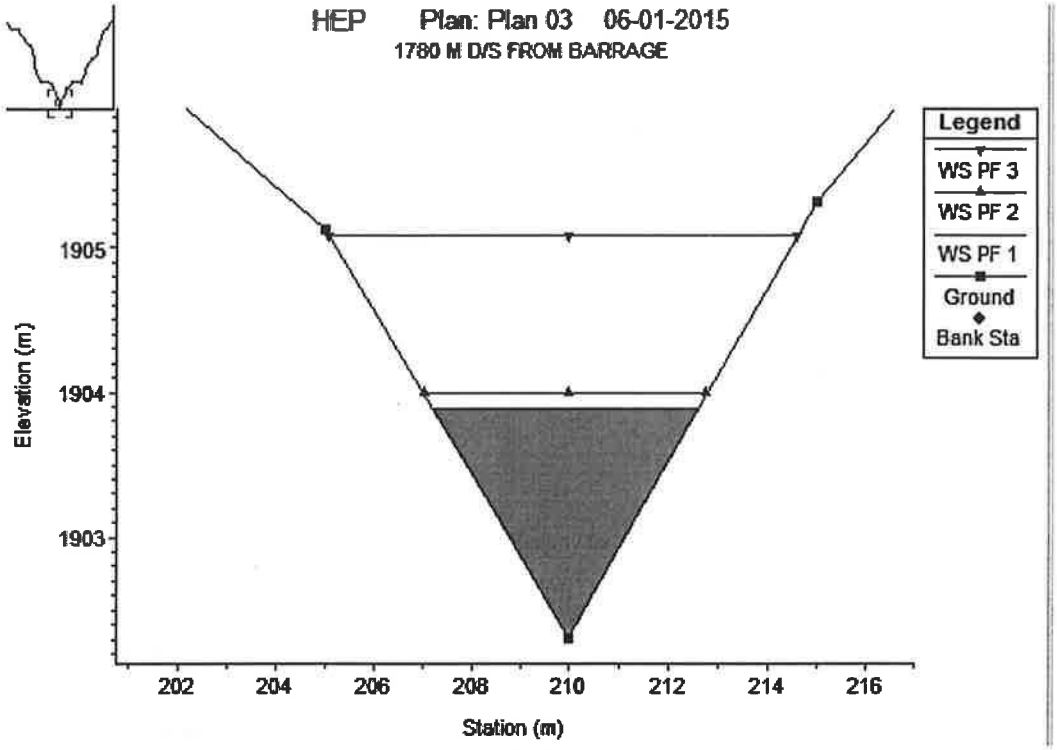
Figure 5: HEC-RAS Model set up for Environmental flow computation of Shongtong Karcham HEP.


HEP Plan: Plan 03 06-01-2015
AT BARRAGE AXIS
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1923
1922
1921
1920
1919
1918
1917
190
195
200
Station (m)
202.18, 1923.32

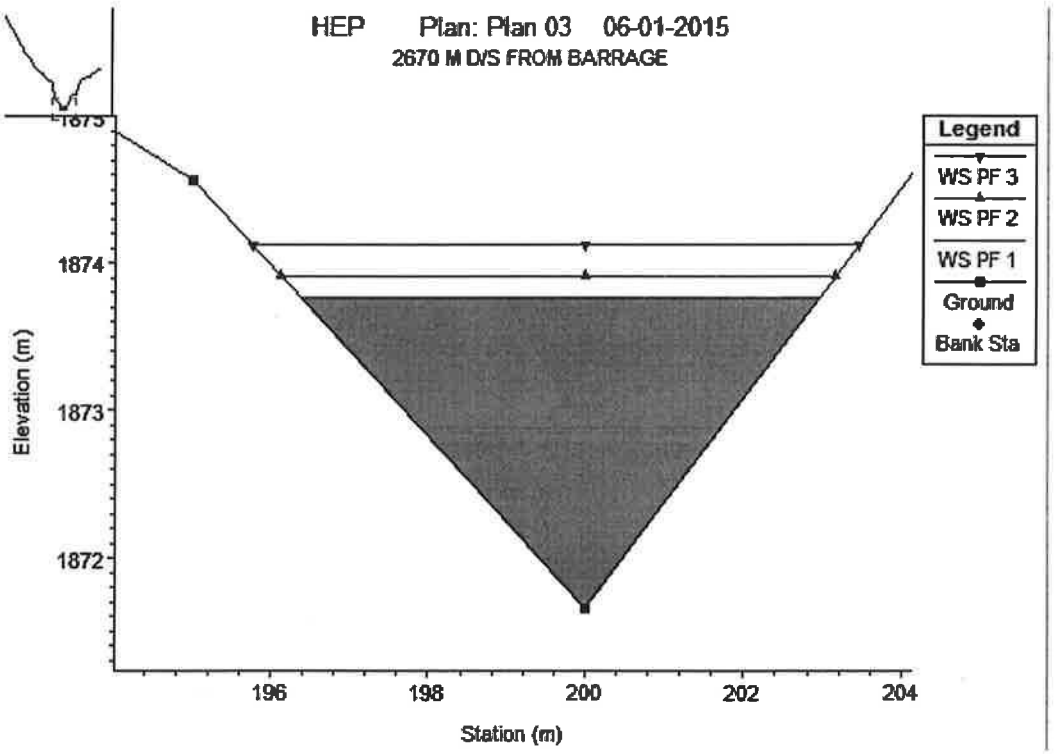
(a)


HEP Plan: Plan 03 06-01-2015
890 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1919
1918
1917
1916
188
190
192
194
196
198
200
Station (m)

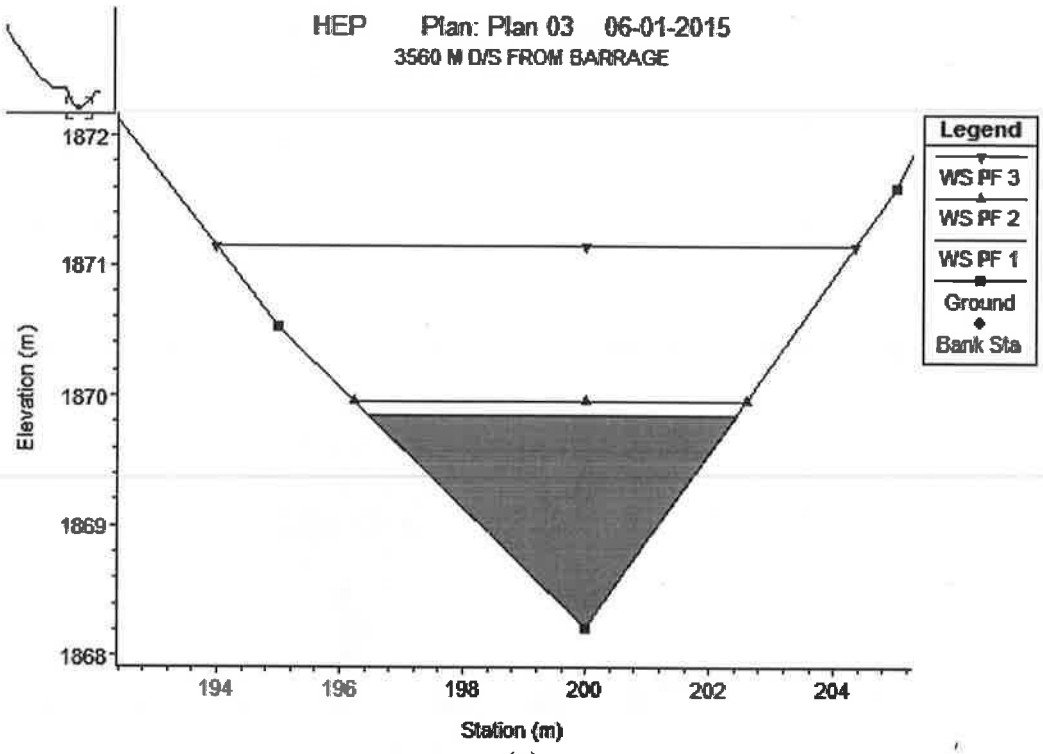
(b)


HEP Plan: Plan 03 06-01-2015
1780 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1905
1904
1903
202
204
206
208
210
212
214
216
Station (m)

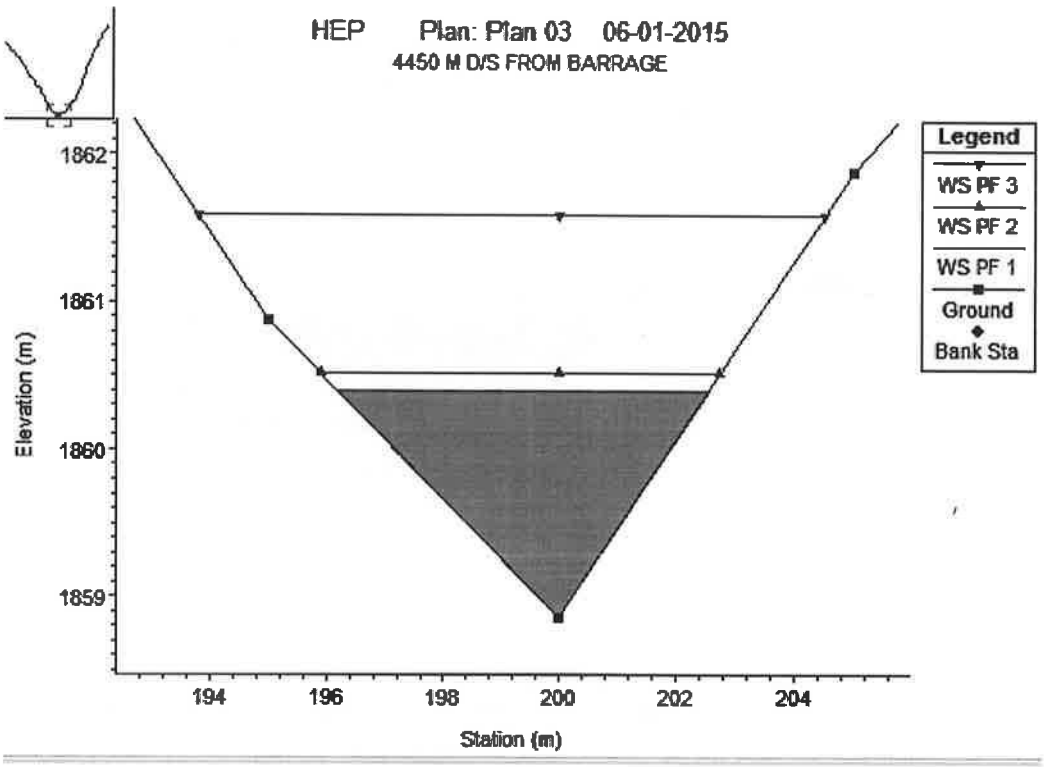
(c)


HEP Plan: Plan 03 06-01-2015
2670 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1874
1873
1872
196
198
200
202
204
Station (m)

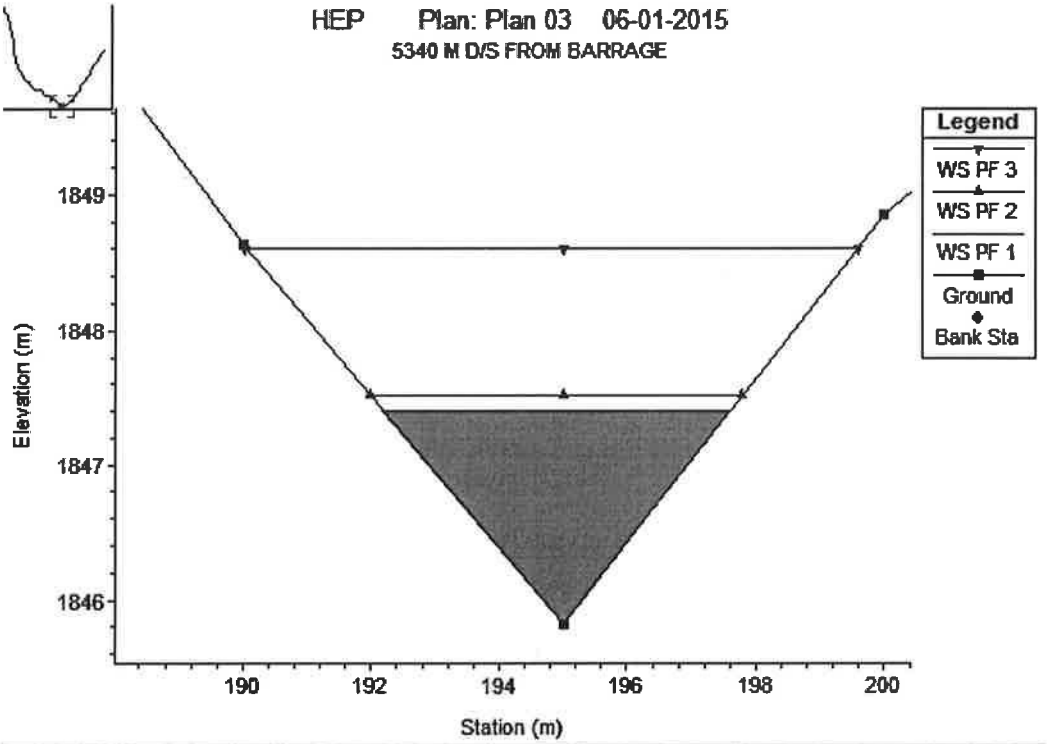
(d)


HEP Plan: Plan 03 06-01-2015
3560 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1872
1871
1870
1869
1868
194
196
198
200
202
204
Station (m)

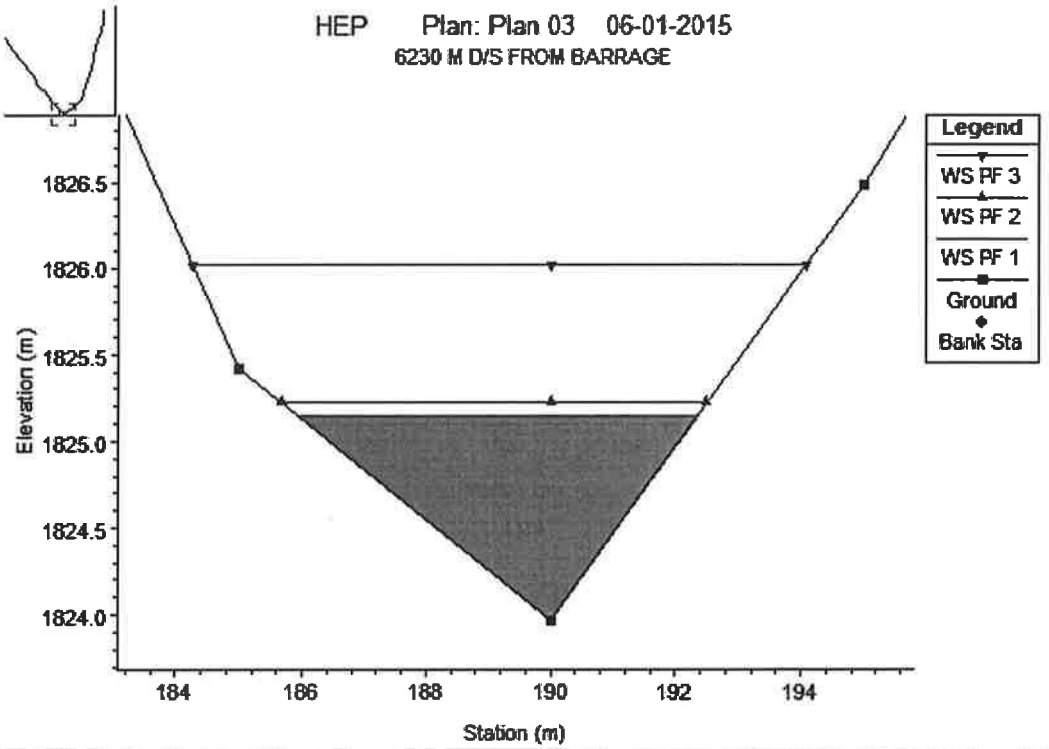
(e)


HEP Plan: Plan 03 06-01-2015
4450 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1862
1861
1860
1859
194
196
198
200
202
204
Station (m)

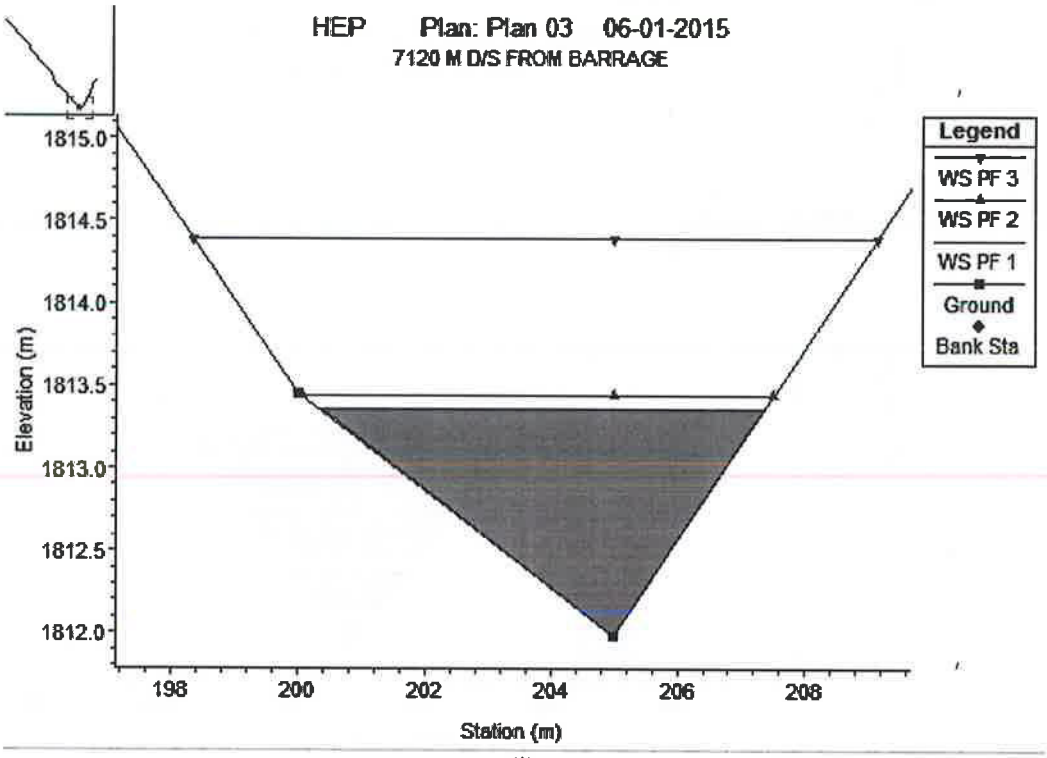
(f)


HEP Plan: Plan 03 06-01-2015
5340 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1849
1848
1847
1846
190
192
194
196
198
200
Station (m)

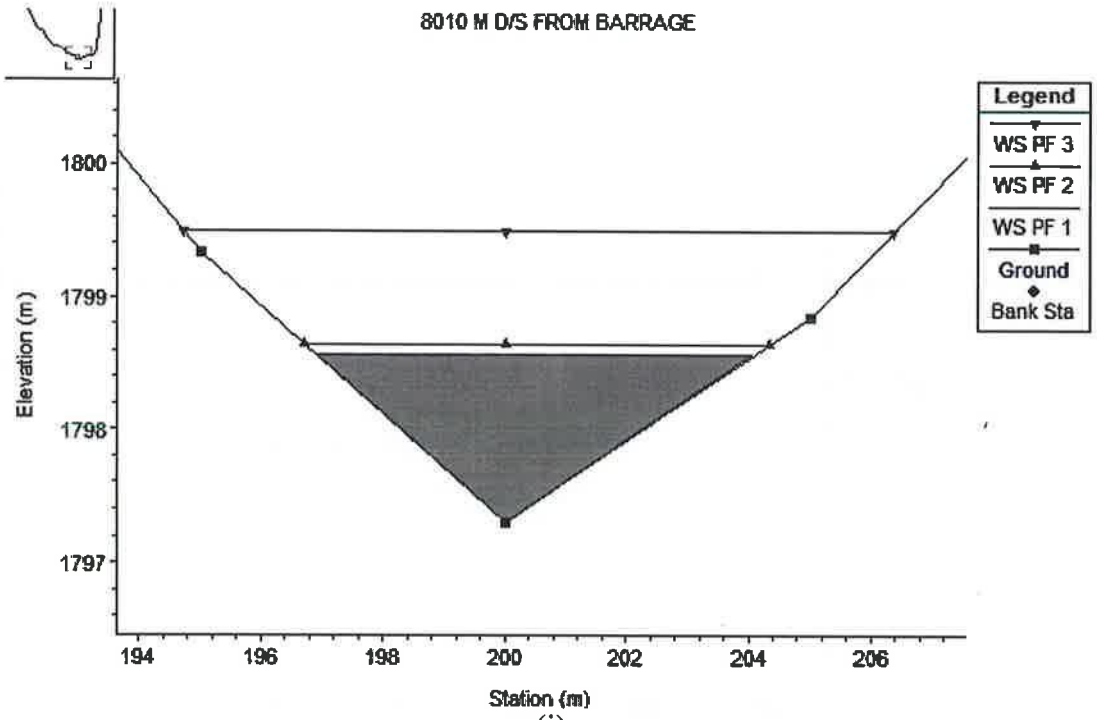
(g)


HEP Plan: Plan 03 06-01-2015
6230 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1826.5
1826.0
1825.5
1825.0
1824.5
1824.0
184
186
188
190
192
194
Station (m)

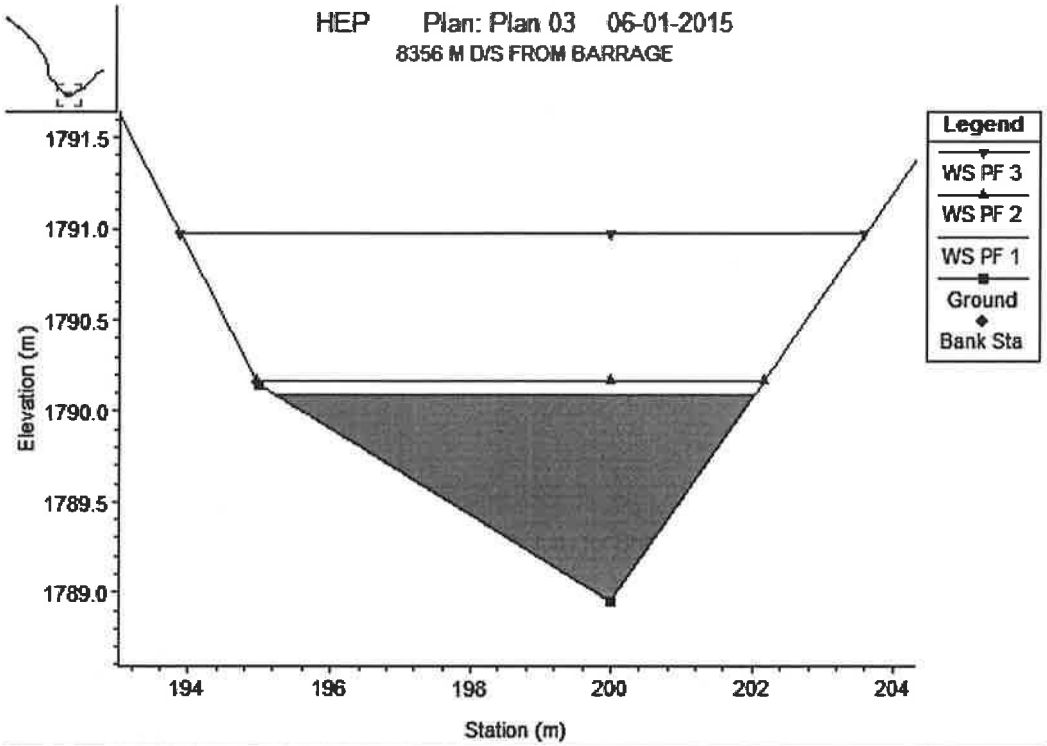
(h)


HEP Plan: Plan 03 06-01-2015
7120 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1815.0
1814.5
1814.0
1813.5
1813.0
1812.5
1812.0
198
200
202
204
206
208
Station (m)

(i)


8010 M D/S FROM BARRAGE
Legend
WS PF 3
WS PF 2
WS PF 1
Ground
Bank Sta
Elevation (m)
1800
1799
1798
1797
194
196
198
200
202
204
206
Station (m)

(j)



(k)

Leanest 4 months of 90% dependable year			Monsoon 4 months of 90% dependable year			Other 4 months of 90% dependable year		
Month	10 daily	Flow (Cumec)	Month	10 daily	Flow (Cumec)	Month	10 daily	Flow (Cumec)
	I	80.58		I	247.38		I	118.37
Dec	II	73.55	June	II	363.94	Oct	II	108.53
	III	72.14		III	406.26		III	101.37
	I	68.73		I	389.3		I	98.22
Jan	II	66.72	July	II	494.89	Nov	II	93.79
	III	66.14		III	661.02		III	86.5
	I	62.99		I	676.04		I	73.74
Feb	II	63.61	August	II	449.91	Apr	II	79.48
	III	64.16		III	376.85		III	86.29
	I	64.84		I	333.51		I	117.2
Mar	II	63.32	Sept	II	228.79	May	II	176.42
	III	69.04		III	161.77		III	147.31
	Avg	67.985		Avg	399.1383		Avg	107.2683
% release of avg			% release of avg			% release of avg		
10%		6.7985	10%		39.91383	10%		10.72683
15%		10.19775	15%		59.87075	15%		16.09025
20%		13.597	20%		79.82767	20%		21.45367
30%		20.3955	30%		119.7415	30%		32.1805
40%		27.194	40%		159.6553	40%		150.1757
50%		33.9925	50%		199.5692	50%		53.63417
100%		67.98	100%		399.1383	100%		107.2683

Table 1 : Flow in River Satluj at Shongtong Karcham HEP in 90% dependable year

Reach	Profile	Q Total	Bed Elevation	Water Surface Elevation	water depth	Flow Velocity	Top Width
		(m3/s)	(m)	(m)	(m)	(m/s)	(m)
AT BARRAGE AXIS	PF 1 (20% release)	13.56	1919.18	1920.85	1.67	1.32	10.84
890 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1915.69	1917.28	1.59	2.43	7.01
1780 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1902.31	1903.97	1.66	2.86	5.71
2670 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1871.65	1874.01	2.36	1.57	7.32
3560 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1868.21	1870.04	1.83	2.23	6.67
4450 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1858.86	1860.5	1.64	2.44	6.78
5340 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1845.82	1847.48	1.66	2.86	5.7
6230 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1823.96	1825.45	1.49	2.28	7.97
7120 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1811.99	1813.45	1.46	2.48	7.49
8010 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1797.3	1798.66	1.36	2.58	7.73
8356 M D/S FROM BARRAGE	PF 1 (20% release)	13.56	1788.95	1790.23	1.28	2.8	7.38
				Average for 20% release	**1.64**	**2.35**	**7.33**
				Average for 100% release	**3.02**	**3.63**	**12.32**

Reach	Profile	Q Total	Bed Elevation	Water Surface Elevation	water depth	Flow velocity	Top Width
		(m3/s)	(m)	(m)		(m/s)	(m)
AT BARRAGE AXIS	PF 2 (15% release)	16.09	1919.18	1920.97	1.79	1.39	11.38
890 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1915.69	1917.38	1.69	2.54	7.48
1780 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1902.31	1904.08	1.77	2.98	6.09
2670 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1871.65	1874.16	2.51	1.64	7.81
3560 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1868.21	1870.16	1.95	2.32	7.11
4450 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1858.86	1860.61	1.75	2.54	7.23
5340 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1845.82	1847.6	1.78	2.96	6.1
6230 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1823.96	1825.54	1.58	2.4	8.27
7120 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1811.99	1813.54	1.55	2.6	7.83
8010 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1797.3	1798.76	1.46	2.68	8.27
8356 M D/S FROM BARRAGE	PF 2 (15% release)	16.09	1788.95	1790.3	1.35	2.97	7.62
				Average for 15% release	**1.74**	**2.46**	**7.74**
				Average for 100% release	**3.64**	**4.00**	**14.64**

Reach	Profile	Q Total	Bed Elevation	Water Surface Elevation	water depth	Flow velocity	Top Width
		(m3/s)	(m)	(m)		(m/s)	(m)
AT BARRAGE AXIS	PF 3 (15% release)	59.87	1919.18	1922.31	3.13	2.02	15.77
890 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1915.69	1918.46	2.77	3.59	11.42
1780 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1902.31	1905.34	3.03	3.8	10.75
2670 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1871.65	1875.74	4.09	2.23	14.02
3560 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1868.21	1871.39	3.18	3.29	11.12
4450 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1858.86	1861.73	2.87	3.59	11.17
5340 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1845.82	1848.83	3.01	3.87	10.25
6230 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1823.96	1826.27	2.31	4.39	10.62
7120 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1811.99	1814.56	2.57	3.74	11.41
8010 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1797.3	1799.75	2.45	3.64	12.61
8356 M D/S FROM BARRAGE	PF 3 (15% release)	59.87	1788.95	1791.22	2.27	4.36	10.5
				Average for 15% release	**2.88**	**3.50**	**11.79**
				Average for 100% release	**6.14**	**5.47**	**23.95**

Table 3: Estimated hydraulic parameters for the critical reach of Satluj river downstream of Shongtong Karcham HEP.

The commercial fisheries are non-existent in the project area. The umbrella aquatic species in the upper reaches of Himalayan rivers are trout. Habitat requirements in terms of depth for projects in trout zone can be 0.4-1m from lean to monsoon and to meet the higher requirement in Mahseer Zone such project should provide about 0.5-1.5m depth.

Estimated Environmental Flow Release from Shongtong Karcham HEP

A. During leanest 4 months

For Habitat requirement of trout and other native fish species the flow in any case should not fall below 0.5m depth. A further check is made that the water depth and flow width in post project scenario should be about 50% of pre0project levels. Accordingly an environmental release of 13.56 cumec has been estimated from Shontong Karcham HEP during the leanest 4 months i.e. December, January, February and March.

B. During monsoon 4 months

Environmental flow requirement in monsoon season is different from that of lean season. Lean season flow is mainly sub-surface flow and therefore, an average value and constant release can meet the lean season flow requirement. Whereas in monsoon, apart from the sub-surface flow, flood peaks are critical for various functions of the river. The flood peaks provide connectivity and wetting of side channels, opening up new habitat, gravel movement, and flushing sediment into side channels. These flows also add organic matter and nutrients through riparian vegetation into the main stream thus providing food to aquatic species. Newly connected side channels provide spawning and rearing habitat for aquatic life. Resident trout, macro-invertebrates and other species also benefit by increased habitat diversity and clean substrates. These high flows should be planned in conjunction with possible gravel augmentation efforts to maximize benefits. Environmental flow requirement in monsoon months should meet the following requirement.

- It should provide adequate habitat in terms of water depth, velocity and water width of channel for needs of aquatic life, which includes migration, breeding and spawning.
- It should provide flood peaks distributed over the monsoon period for riparian vegetation abundance, to wet side channels and maintain habitat for aquatic species.
- The flows should mimic natural flow pattern that naturally occurred in the rainy season.
- It should meet flow requirements for breeding and spawning of prevalent fish species.

Requirement for environmental flow in monsoon can be established from the hydraulic output i.e. flow width, depth and velocity to meet habitat requirement. No specific criteria can be established to exactly fix the minimum habitat requirement due to adaptability of the species to varied conditions in the rivers. However based on the finding of various studies it can be concluded that projects should not reduce water depth below 1 m in monsoon and to meet higher requirement it should provide about 1.2 – 1.4 m depth.

An environmental release of 59.87 cumec has been assessed from Shongtong Karcham HEP during the monsoon 4 months i.e. June, July, August and September.

C. During other 4 months

To mimic the annual flow cycle of the natural flow regime the environmental flow in pre-monsoon and post monsoon period are equally important. From the river flow point of view these months are the transition periods from wet season to dry season and vice versa. During pre-monsoon

months some small pulses of higher flow are observed due to intermittent rain spell and increased snow melt in Himalayas. During post-monsoon months the higher flow occurrences are due to increased base flow and intermittent rain spells. The environmental flow requirements for pre-monsoon and post monsoon period can be established from the hydraulic output i.e. flow width, depth and velocity to meet the habitat requirement. In order to follow the natural flow regime, the environmental flow should be higher than that of the lean season and less than that of monsoon.

Accordingly an environmental release of 16.09 cumec has been assessed from Shongtong Karcham HEP during the other 4 months i.e. October, November, April and May.

Conclusions

For assessing environmental flow requirements, different methodologies like hydraulic rating methodologies, habitat simulations or micro-habitat modeling methodologies along with desktop methods based on hydrological data like Environmental Management Class (EMC) etc. are available. In this study the EFR recommendation is based on hydraulic rating cum habitat simulation methodology. The recommended values are:

1. Lean Season – 13.56 cumec
2. Monsoon season – 59.87 cumec and
3. Non Monsoon and Non Lean season – 16.09 cumec.

Annex-V

(1/2)

Himachal Pradesh Power Corporation Limited
(A State Government Undertaking)
Shongtong-Karchham Hydro Electric Project, Reckong-Peo
Phone: - 01786-222801 Fax:-01786- 223174 Email: - skhep.hppcl@gmail.com

No. HPPCL/SM(R&R)-STKHEP/Env-VII/2014- 5201-5203 Dated:- 13/11/2014

To

The Environment Engineer,
H.P. State Pollution Control Board,
Opp. Indira Market, Rampur,
Distt. Shimla, (HP).

Subject: Muck/Debris Disposal Statement by Shongtong Karchham HEP for the month of October, 2014.

Sir,

This is in reference to subject cited above and the condition no. 6 stipulated under Consent to Establish granted in favour of Shongtong Karchham HEP by HPSPCB. In this context, the muck/debris disposal statement for the month of October, 2014 has been enclosed herewith for your kind information.

Also, it is requested that as desired by the Member Secretary, H.P. State Pollution Control Board during the presentation held on 10.09.2014 at Shimla, the specifications of instruments to be deposited with HPSPCB in kind for implementation of EMP in r/o Shongtong Karchham HEP has been sent to you vide email.

Thus, it is requested that the list of instruments having the specification as desired by HPSPCB may kindly be sent to this office for early procurement and implementation of EMP.

Your's faithfully,

Encl: As above

Sr. Manager(R&R),
Shongtong-Karchham HEP,
HPPCL Reckong-Peo,
Distt. Kinnaur (HP).

o/c

Copy of above is forwarded for information to the following:-

1. The Member Secretary, H.P. State Pollution Control Board, Him Parivesh, Phase-III, New Shimla-171009.
2. The General Manager, STKHEP, HPPCL, R/Peo.

MONTHLY STATEMENT OF MUCK/DEBRIS DISPOSAL BY SHONGTONG-KARCHHAM HEP (UNDER CONSTRUCTION) FOR THE MONTH OF OCTOBER, 2014

2/2

NOTES: (i) All quantities are in cubic meters.
(ii) All quantities are reported with swelling factor.

Sr. No.	Project component	Gross estimated quantity of muck/debris to be generated	Quantities of muck/debris (cum) for the month April, 2014			Cumulative Quantities (cum) of muck/debris for the month April, 2014			Name of the Dumping Site	Capacity of the dumping site	Remarks
			Generated	Utilized	Dumped	Generated	Utilized	Dumped			
1	Adit-II	20,000.00	2049.30	0.00	2049.30	6210.55	4161.25	2049.30	--	--	
2	Road to Adit-III	20,000.00	0.00	0.00	0.00	5300.00	5300.00	0.00	--	--	
3	Adit to P/H bottom	18,000.00	432.63	0.00	432.63	15733.45	5220.0	10513.45	05	115750	
4	Ventilation Tunnel	15,000.00	--	0.00	--	10271.26	4200.0	6071.26	05	115750	
5	Main Access Tunnel	18,000.00	0.00	0.00	0.00	11497.16	2636.59	8860.57	08	187300	
6	Adit to Transformer Cavern	530.15	--	--	--	530.15	530.15	---	--	--	
7	Transformer Cavern	37,520.00	2816.00	0.00	2816.00	7488.00	--	7488.00	5	115750	
8	Power House Cavern	1,60,000.00	3456.00	0.00	3456.00	5440.0	--	5440.0	8	187300	
10	Adit-I	20,083.84	251.44	251.44	0.00	251.44	251.44	0.00	--	--	Reutilized for Site Development
11	Adit-III	17, 551.91	3456.00	0.00	3456.00	5440.00	0.00	5440.00	8	187300	

Sr. Manager
Shongtong-Karchham HEP,
HPPCL, Reckong Peo
Distt. Kinnaur (H.P.)

Annex – VI
~~Annex – V~~

Himachal Pradesh Power Corporation Limited
(A State Government Undertaking)
Shongtong-Karchham Hydro Electric Project, Reckong-Peo
Phone: - 01786-222310, 222962, 222801, Fax:-01786- 223174, Email: - skhep.hppcl@gmail.com

No. HPPCL/SM(R&R)- SKHEP/ Env-VII /2014- 5278-82 Dated:- 17/11/2014

To

The Chief Medical Officer,
Regional Hospital Reckong Peo,
Distt. Kinnaur (H.P.).

Subject: - Reg. HIV/AIDS awareness programme on 27th Nov. 2014 at Ralli.

Sir,

This is with reference to subject cited above and meeting held with your good self on dated 22.09.2014 reg. implementation of activities proposed under Environment Management Plan of Shongtong Karchham HEP.

In this context, it is brought to your notice that HPPCL has proposed to conduct HIV/AIDS awareness among its staff, contractor, subcontractorsand labour engaged for the construction of the project on 27th Nov. 2014 at Ralli.

It is therefore requested, that for creating awareness among the HPPCL staff, contractor, subcontractorsand labour engaged for the construction of the project, DAPO from Regional Hospital, Kinnaur may please be deputed for the HIV/AIDS awareness programme on 27th Nov. 2014.

Thanking you,

Yours faithfully,

Sr. Manager (R&R),
Shongtong-Karchham HEP,
HPPCL, Reckong-Peo,
Distt. Kinnaur (HP).

O/C

Copy forwarded for information to the following:-

1 The Director (Civil), Himfed Building, Bye Pass Road (Panjri), Below Old MLA's Quarters, Tutikandi, Shimla, Himachal Pradesh – 05.
2 The General Manager, Shongtong-Karchham HEP, HPPCL, Reckong Peo.
3 The Chief Environment Specialist, Uttam Bhawan (Dogra Lodge), Near 103 Tunnel, Shimla-4.
4 The General Manager. Patel Engineering Ltd., Shongtong Karchham HEP, Near State Bank of Patiala, Vill. & PO -Khawangi, Teh- Kalpa, Kinnaur – 172107 for ensuring the participation of its employees, subcontractors and labour engaged. Also, to provide the necessary arrangements for conducting the programme at Project Office (Ralli), successfully.

Himachal Pradesh Power Corporation Limited
(A State Government Undertaking)
Shongtong-Karchham Hydro Electric Project, Reckong-Peo
Phone: - 01786-222310, 222962, 222801, Fax:-01786- 223174, Email: - skhep.hppcl@gmail.com

No. HPPCL/ DGM(R&R)-SKHEP/Env-VII/2014- 6803-07 **Dated:** - 23/12/2014

To

The SDM-cum-Member Secretary (LADC),
Distt. Kinnaur at Reckong Peo.

Subject: - Fisheries Management Plan in respect of Shongtong Karchham HEP, HPPC Distt. Kinnaur, HP.

Sir,

This is with reference to subject cited above and letter no. KNR-I-228/34(GB)/20 1044636, dated 06/12/2014 from the O/o AC to DC Kinnaur at Reckong Peo, vide which revi proposal regarding the nominated member of steering committee from Project Affected Family in Shongtong Karchham HEP was sought from your office.

In this context, it is requested that **Mrs. Lalita Pancharas, Pradhan Gram Pancha Khawangi** may please be nominated as member of the steering committee (as the representative Project Affected Families), in r/o Fisheries Management Plan of Shongtong Karchham HEP

Thanking you,

Yours faithfully,

23/12/14

Dy. General Manager (R&R),
Shongtong-Karchham HEP,
HPPCL, Reckong-Peo,
Distt. Kinnaur (HP).

CC: - forwarded for information, to:

1 The General Manager, STKHEP, HPPCL, Reckong Peo.
2 The Chief Environment Specialist, HPPCL, Uttam Bhawan, Near 103 Tunnel, Shimla-4.
3 The AC to Deputy Commissioner, Distt. Kinnaur at Reckong Peo w.r.t. his office lette KNR-I-228/34(GB)/2014-1044636, dated 06/12/2014.
4 Mrs. Lalita Pancharas, Pradhan Gram Panchayat Khawangi, Development Block Kalpa, Kinnaur (HP)-172107.

No. KNR-I-228/34(GB)/2014-
Office of the Deputy Commissioner,
District Kinnaur at Reckong Peo.

To

The SDM-cum-Member Secretary (LADC),
Kinnaur at Reckong Peo.
Dated:

Subject:- Fisheries Management Plan in respect of Shongtong-Karchham HEP, HPPCL, Distt. Kinnaur, H.P.

Sir,

In continuation to this office letter of even No. 1044558 dated 29-11-2014, it is to inform you that the Sr. Manager (Envt.), Shongtong-Karchham HEP, HPPCL, Reckong Peo vide his letter No. HPPCL/ SM(Env.)-SKHEP/Env-VII/2014- 5974-76 dated 03-12-2014 (copy enclosed) has intimated this office that Sh. Man Chand, V.P.O. Pangi is from Gram Panchayat Pangi, which does not falls in the project area of Shongtong- Karchham HEP has been nominated as a member of Steering Committee and has requested to select the nominated representative of Project Affected Families from Gram Panchayat Khawangi, Barang, Powari and Ralli.

Therefore, you are requested to kindly look into the matter and send the revised proposal in this behalf to this office at the earliest to proceed further in the matter accordingly please.

Encls: As above.

2465
8/12/2014
Reckong Peo Distt.

Yours faithfully,

Dr. (Maj.) Vishal Sharma, HAS,
Offg. AC to DC Kinnaur at Reckong Peo.
Dated: 06/12/14

Endst. No. As above. 1044656

Copy to the Sr. Manager (Envt.), Shongtong-Karchham HEP, HPPCL, Reckong Peo w.r.t. his letter referred to above for information please.

Dr. (Maj.) Vishal Sharma, HAS,
Offg. AC to DC Kinnaur at Reckong Peo.

No. KNR-I-228/34(GB)/2014- 1044558
Office of the Deputy Commissioner,
District Kinnaur at Reckong Peo.

To

The Dy. General Manager (R&R),
Shongtong-Karchham HEP,
HPPCL, Reckong Peo, District Kinnaur (H.P.)
Dated: 29/11/14

Subject:- Fisheries Management plan in respect of Shongtong Karchham HEP, HPPCL, Distt. Kinnaur, HP.

Sir,

This is with reference to your letter No. HPPCL/ DGM(R&R)-SKHEP/Env-VII/2014-3299-3305 dated 04-09-2014 on the subject cited above.

It is informed that as per para 3.7 of Fisheries Development Plan, the following representatives are hereby nominated as members of Steering Committee in respect of Shongtong – Karchham HEP as under:-

1. The Sub-Divisional Officer (Civil), Kalpa at Reckong Peo. — Representative of Deputy Commissioner (Sr. No. 03)
2. Sh. Sachin Negi, V.P.O. Sangla. — Representative of Local Public (Sr. No. 05)
3. Sh. Man Chand, V.P.O. Pangi. — Representative of Project Affected Families (Sr. No. 06)

Yours faithfully,

(M.R. Bhardwaj) HAS,
Deputy Commissioner,
Distt. Kinnaur at R-Peo.
Dated:

Endst. No. As above.
Copy for information to:-
1. The Sub-Divisional Officer (C), Kalpa at Reckong Peo.
2. Sh. Sachin Negi, V & P.O. Sangla.
3. Sh. Man Chand, V & P.O. Pangi.

(M.R. Bhardwaj) HAS,
Deputy Commissioner,
Distt. Kinnaur at R-Peo.

No. FSH-F (2)39/2010-ARC-VII- 11157
Directorate of Fisheries,
Himachal Pradesh.

From

The Director-cum-Warden of Fisheries,
Himachal Pradesh.

To

The Deputy General Manager (R&R)
Shongtong- Karchham HEP,
HPPCL, ReckongPeo,
District Kinnaur(HP)

04 DEC 2014
Bilaspur (H.P.)

Dated Bilaspur-174001 the, 29-11-14

Subject: - **Fisheries Management Plan in respect of Shongtong Karchham HEP, HPPCL, Distt Kinnaur (H.P.)**

Sir,

I invite a reference of your letter No. HPPCL/DGM(R&R)-SKHEP/Env.-VII/2014-3299-3305 dated 04-09-2014 which is addressed to Principal Secretary(Fisheries) to the GoHP, Shimla-2 and copy among others sent to this office on the subject cited above.

In this regard, **Assistant Director of Fisheries, Shimla-5** is hereby nominated as member on behalf of Fisheries Department for the steering committee likely to be constituted for monitoring and appraisal of Shongtong-Karchham, HEP. This for your kind information and further necessary action at your end, please.

2509
Dated 9/12/2014

Yours faithfully,

(Gurcharan Singh)
Director-cum-Warden of Fisheries,
Himachal Pradesh, Bilaspur.
E-mail : fisheries.hp@nic.in
Tel/Fax: 01978-224068

Endst No. As above- Dated:-

Copy to :-

1. The Additional Chief Secretary (Fisheries) to the Government of H. P., Shimla-2 for favour of information w.r.t. his letter No. Fish-A(4)-4/2013, dated 19.09.2014.
2. The Assistant Director of Fisheries, Shimla-5 for information.

(Gurcharan Singh)
Director-cum-Warden of Fisheries,
Himachal Pradesh, Bilaspur.
E-mail : fisheries.hp@nic.in
Tel/Fax: 01978-224068

Annex -VII

(1)

Details of LADA Development Budget

Contribution toward LADF			
Sr. No.	Year Contribution	Fund released till date	Balance Amount
1	2008	1.00 Crore	31.57 Crore
2	2013	3.21 Crore	
3	2014	6.33 Crore	
4	Total=	10.54 Crore	31.57 Crore

Annep-VIII

HIMACHAL PRADESH POWER CORPORATION LTD.
(A State Government Undertaking)
Shongtong-Karchham Hydro Electric Project, Reckong-Peo, Kinnaur-172107 HP
Phone: 01786-223310, Fax :01786-223174, Email- skhep.hppcl@gmail.com

No. HPPCL/DGM(R&R)-SKHEP/ EC-Vol-I /2014- 6779 Dated:- 22/12/2014

To

Director (S),
Ministry of Environment and Forests (GOI),
Northern Regional Office,
Bays No. 24-25, Sector 31-A,
Dakshin Marg, Chandigarh-160030

Sub: Six Monthly Report of Shongtong-Karchham Hydroelectric Project (402MW) in village Powari, District-Kinnaur (H.P.) by H.P Power Corporation Ltd.-environment clearance regarding.

Sir,

In reference to above cited file no. please find enclosed herewith six monthly report of Shongtong-Karchham HEP as under:

S. No.	Conditions	Compliance Status
1	Names and address of the Project-In charge along with their telephone, FAX, mobile and Email address.	Er. A.K.Patyal General Manager (HoP) Shongtong-KarchhamHEP (402MW), HPPCL, Reckong-Peo, Distt. Kinnaur (H.P.)-172107. Office Ph.- 01786-223310, Fax-01786-223174 Mb. No. – 09418066776
2	Current Status of construction of project and likely date of commissioning.	Under Construction. Date of commissioning: April 2017 (As per TEC).
3	Exact Location of the project site including district etc.	Barrage at Powari with Power house at Ralli, near District

O/C

HIMACHAL PRADESH POWER CORPORATION LTD.
(A State Government Undertaking)
Shongtong-Karchham Hydro Electric Project, Reckong-Peo, Kinnaur-172107 HP
Phone: 01786-223310, Fax :01786-223174, Email- skhep.hppcl@gmail.com

		the project cost has to be deposited as CAT Plan of the project. Total of **Rs. 60.44 crores** has been deposited in Adhoc CAMPA a/c pertaining to the concerned state.

S.No.	Funds released by the project authorities till date.	Funds sent by the Forest. Deptt. Till date.	Details of Engineering Works done till date	Area covered by plantation and no. of plants planted.
	Rs. 60.44 crores	**Annexure-II (proposed activities under CAT Plan for FY 2014-15)**		

8	Physical and financial progress about implementation of R&R scheme may be updated from time to time. A copy of the R&R Scheme finalized so far may be submitted.	The activities undertaken under R & R plan till Nov. 2014 have been attached as **Annexure-III**.
9	A copy of the proceedings/commitments made during the public hearing may be submitted and a plan having physical and financial targets to meet the commitments may be submitted.	**Annexure-IV**.
10	Submit latest monitoring reports in respect of Ambient air Quality, Noise level, Ground Water Quality, Bio-Chemical Oxygen Demand (BOD) and Coliform count of surface water etc. carried out by HP SPCB or a private approved lab.	The cost of Environment Monitoring Plan i.e. Rs. 23.61 Lac is being deposited to HPSPCB. The monitoring will start after the said amount is deposited.
11	Submit comprehensive physical and financial progress about disbursement of medical facilities by contractor to the workers during the compliance period.	
12	Submit update details about the quantum of crate works/ wire crate works / breast walls etc. at different dumping sites along with expenditure figures till date.	Total Wire Crate work done = 3276 (at DS 5, 6, 8 & NH-5 protection). Total Expenditure =

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Year/Period	No. of labourers engaged contract wise	Quantum of free fuel supplied or subsidy provided	Financial expenditure incurred (Rs.)
Till May 2014	115	56 Nos. of LPG Cylinders	1,11,200/-

18 The information about no. of laborers medically checked up by different contractors expenditure incurred on medicines and other medical facilities may be submitted in the following Performa:-

Year/Period	No. of labourers medically checked contract wise	Expenditure incurred on providing medicines (Rs.)	Expenditure incurred on providing other facilities (Rs.)
Till May 2014	213 nos. Medical checkup has been done.	13268/-	2271125/-

19	Submit the details of social welfare measures and other schemes being run for the locals and project affected people.	The schemes which has been initiated at project level are as under:- 1. Scheme for involving Community based Organization (CBO) in R&R activities e.g. Mahila Mandal, youth club etc. 2. Competition Scheme for school students and sports tournament scheme. 3. Scheme for organizing one day Training cum Awareness camps. 4. Scheme for providing assistance to PAF for self employment. 5. R&R Medical Fund scheme. 6. Merit and Support scholarship Scheme for the wards of Project Affected People. 7. Scheme for Annual Varshik Mela.

HIMACHAL PRADESH POWER CORPORATION LTD.
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Shongtong-Karchham Hydro Electric Project, Reckong-Peo, Kinnaur-172107 HP
Phone: 01786-223310, Fax :01786-223174, Email- skhep.hppcl@gmail.com

Ministry of Environment & Forests
Northern Regional Office
Chandigarh

DATA SHEET

1	Project Type	River Valley Project
2	Name of the Project	Shongtong – Karchham HEP
3	Clearance letter (s)/O.M No. & dates:	J-12011/58/2007-IA-I, dated 19/05/2011
4	Location: a) District (s) b) State (s) c) Latitudes /Longitudes	 a) Kinnaur b) Himachal Pradesh c) Latitude- 31°32'30" Longitude - 78°16'50"
5	Address for correspondence:	O/o General Manager, Shongtong – Karchham HEP, HPPCL, Reckong-Peo, Distt. Kinnaur (H.P.)- 172107
6	Salient features: a) Of the project b) Of the environmental Management plans	 Please refer letter no. HPPCL/SM(R&R)-SKHEP/Env-IV/2011-1718-20, dated 22/07/2011.
7	Breakup of the project area a) Submergences area: Forest and Non-forest b) Others	 a) Submergence Area is 27.7605 hectares. b) Detail of the land for various components of the project has been already submitted vide letter no. HPPCL/SM(R&R)-SKHEP/Env-IV/2011-1718-20, dated 22/07/2011.
8	Break up of project affected population with enumeration of those losing houses/dwelling units only, agricultural land only dwelling units and agricultural land and	A detailed baseline survey of the project area for the formulation of Social Impact Assessment Report was done by Yashwant Parmar Horticulture University, Nauni, Distt. Solan (H.P.) from 2008 to 2010. The public hearing in all the Panchayat's were held in the month of Feb 2011. The

HIMACHAL PRADESH POWER CORPORATION LTD.
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Phone: 01786-223310, Fax :01786-223174, Email- skhep.hppcl@gmail.com

	b) The status of tree felling c) The status of compensatory afforestation, if any. d) Comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experiences so far.	b) Under Process c) HPPCL has deposited Rs. 1, 74, 65, 952/- (Rs. One crore seventy four lac sixty five thousand nine hundred fifty two only) towards the cost of compensatory afforestation in CAMP A/C of MoEF. d) Compensatory Afforestation for the project has not been started yet.
11	The status of clear felling in non-forest areas (such as submergence area of reservoir, approach road) if any, with quantitative information.	Under Process
12	Status of construction:- a) Date of commencement (actual and/or planned) b) Date of completion (actual and/or planned)	a) June 2012 (As per TEC) b) April 2017 (As per TEC)
13	Reasons for the delay if the project is yet to start:-	NIL

22/12/14

General Manager (THDC/R&R)
Shongtong-Karchham H...
HPPCL, RECKONG PEO,
Distt. Kinnaur (H. P.) 172107

Annex-IX

कार्यालय ग्राम पंचायत शुदारंग

विकास खण्ड कल्पा, ज़िला किन्नौर (हि०प्र०)

अध्यक्षता : प्रधान श्री प्रदीप कुमार दिनांक 04-01-2015
गणपूर्ती : 118/235
प्रस्ताव संख्या : सात
प्रेषित:– महाप्रबन्धक शौंगठोंग – करच्छम जल विद्युत परियोजना (450 मे0वा0) रिकांग पीओ
विषय :– ग्राम सभा में अनुसूचित जन जाति और अन्य परम्परागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम 2006 के अन्तर्गत वन अधिकारों तथा प्रभावित पंचायत का एजेण्डा बारे।
प्रस्ताव संख्या सात

आज की ग्राम सभा बैठक में विशेष चर्चा उपरान्त सर्व सम्मति से यह निर्णय लिया गया है कि उपरोक्त विषय के सन्दर्भ में शौंगठोंग – करच्छम (450 मे0वा0) जल विद्युत परियोजना के प्रभावित क्षेत्र के निर्धारण हेतू हिमाचल प्रदेश सरकार के नए अधिसूचना जोकि दिनांक 5 अक्तूबर, 2011 को जारी हुई थी इस चर्चा के उपरान्त आज की ग्राम सभा में हिमाचल प्रदेश पावर कारपोरेशन लिमिटेड द्वारा शौंगठोंग – करच्छम (450 मे0वा0) जल विद्युत परियोजना के निर्माण के लिए 3 – 14 – 21 है0 वन भूमि के उपयोग की मंजूरी प्रस्तावित है। इसमें वन अधिकारों के साथ प्रस्तुत दस्तावेजों के अध्ययन तथा उस पर विस्तृत चर्चा के उपरान्त वन अधिकार समिति सभा द्वारा निम्नलिखित पात्रों का दावा नियमानुसार सही पाया गया इसलिए ग्राम सभा शुदारंग प्रभावित पंचायत के सभी आज की तारीक के लोगों को वन अधिकार के तहत जो मुआवजा मिलना है ग्राम सभा द्वारा इसमें सहमति जताते हुए कुछ एजेण्डे सभा में प्रस्तुत किया है :-

1. बौक्टो नाला से 6 ईंच पाईप द्वारा सिंचाई लाईन व टैंक बरदडे तक निर्माण बारे।
2. प्रत्येक ग्रामवासी मीटर धारक को 300 युनिट बिजली मुफ्त प्रदान कराने बारे।
3. सभा क्षेत्र के लोगो को योग्यता अनुसार परियोजना में रोजगार प्रदान कराना।
4. शुदारंग ग्राम के हर गली में सोलर लाईट लगवाने बारे।
5. रांग प्राथमिक पाठशाला को मुरम्मत करवाने के लिए धनराशि मुहैया करवाने बारे।
6. शुदारंग ग्रामवासियों को प्ररियोजना क्षेत्र का शेयर देने बारे।
7. 2015 के जनवरी तक परिवार रजिस्टर में सभी इन्द्राजों को 500 दिन का बेरोजगार भत्ता देने बारे।
8. डम्पिंग नं0 3 शौंगठोंग में मुर्दाघाट स्थल पर वर्षा – शालिका निमार्ण बारे।
9. डम्पिंग स्थल पर कार्य पूर्ण होने पर वृक्षारोपण बारे।

General Manager SKHEP-HPPCL
Dairy No. 2831
Dated 6/1/2015
Reckong Peo Distt. Kinnaur

अत: प्रस्ताव सर्व सम्मति से पारित कर महाप्रबन्धक शौंगठोंग जल विद्युप परियोजना (450 मे0वा) की सेवा में प्रेषित की जाती है।

प्रस्ताव नकल असल के अनुरूप है।

सचिव
ग्राम पंचायत शुदारंग
तहसील जिला किन्नौर

06/01/2015

Annex-X

STARTECH LABS PVT. LTD.
2nd Floor, SMR Chambers, H.No.: 1-58/7,
Opp.: St. Ann's Jr. College, Madinaguda,
Hyderabad - 500 050, Telangana, INDIA.
Tel.: +91-40-23041900, 23041905, 40215094
E-mail: quality@startechlabs.com
(C.L. No. 1/RRIAP/2004/AL/G)

STARTECH LABS
QUALITY SCIENCE IS OUR STRENGTH

1/11

TEST REPORT

Name of the Industry	M/S Himachal Pradesh Power Corporation Limited	Date of Sampling	11& 12th Dec, 2014
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16012-016/14		

NOISE MONITORING REPORT

S.No.	Location	Day		Night	
		Time	Levels in Leq (dBA)	Time	Levels in Leq (dBA)
1	Near Barrage	10.50 am	73.6	10:05 pm	68.9
2	Near Adit-I	11.00 am	70.2	10:15 pm	63.5
3	Near Adit-II	11:10 am	73.1	10:20 pm	67.7
4	Near Adit-III	11.15 am	70.0	10:25 pm	63.2
5	Near Project Office (Ralli)	11.40 am	72.9	10:40 pm	67.5
6	Near Crusher Plant (Proposed)	11.50 am	74.1	10:45 pm	68.5
7	Near Power House	12.00 pm	72.3	10:55 pm	63.0
CPCB Limits		75 dBA		70 dBA	

Sampling is carried out as per Standard methods

Equipment Details : Make : Quest Technologies
Model No: SLM 210

Monitored by : Mr. Siva Ganesh – Env. Executive

Remarks : Complies

Compiled by: A Siva Ganesh 22/12/14

Authorised By:

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[D.L.No. : 1/RR/AP/2004/AL/G]

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TEST REPORT

Name of the Industry	**M/S Himachal Pradesh Power Corporation Limited**	Date of Sampling	11th Dec, 2014
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16005/14		
Time of monitoring : 10.10 AM – 10.10 AM		Duration : 24hrs	
Wind speed: 3.0 Kms / hr		Wind direction : North West to South East	
Ambient Air Temp: 8.6 °C			

AMBIENT AIR QUALITY – NEAR BARRAGE

S.No.	PARAMETERS	LIMITS	RESULTS
1	Particulate Matter as PM_{10} ($\mu g/m^3$)	100	43.6
2	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	60	12.5
3	Sulphur Dioxides as SO_2 ($\mu g/m^3$)	80	13.1
4	Nitrogen Dioxides as NO_2 ($\mu g/m^3$)	80	15.7
5	Carbon Monoxide as CO ($\mu g/m^3$)	4.0	Nil

Sampling and Analysis carried out as per IS : 5182

Equipments Details: Make : Aero Vironment
Model No: RDS 9000,

Equipments Details Make : Ecotech
Model No: AAS 127

Monitored by : Mr. Siva Ganesh – Env. Executive
Mr. Srinivas Reddy - Env. Asst. Executive

Remarks : **Complies**

Compiled by : A. Bhavana 22/12/14

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TEST REPORT

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Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16007/14		
Time of monitoring : 11.05 AM – 11.05 AM		Duration : 24hrs	
Wind speed: 2.9 Kms / hr		Wind direction : North West to South East	
Ambient Air Temp: 8.8 °C			

AMBIENT AIR QUALITY – NEAR POWER HOUSE COMPLEX

S.No.	PARAMETERS	LIMITS	RESULTS
1	Particulate Matter as PM_{10} ($\mu g/m^3$)	100	51.2
2	Particulate Matter as $PM_{2.5}$ ($\mu g/m^3$)	60	13.1
3	Sulphur Dioxides as SO_2 ($\mu g/m^3$)	80	12.9
4	Nitrogen Dioxides as NO_2 ($\mu g/m^3$)	80	15.0
5	Carbon Monoxide as CO ($\mu g/m^3$)	4.0	Nil

Sampling and Analysis carried out as per IS.: 5182

Equipments Details: Make : Aero Vironment
Model No: RDS 9000,
Equipments Details Make : Ecotech
Model No: AAS 127

Monitored by : Mr. Siva Ganesh – Env. Executive
Mr. Srinivas Reddy - Env. Asst. Executive

Remarks : **Complies**

Compiled by : A. Bhavana 22/12/14

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Name of the Industry	M/S Himachal Pradesh Power Corporation Limited	Date of Sampling	12th Dec, 2014
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
Ref No:	STL/EHS/L16009/14	Time of Sampling	2:10 pm

STACK MONITORING REPORT

Details	D.G.Set-250 KVA Barrage	Stack Height, m	3.0
Fuel Used	Diesel	Stack Diameter, m	0.16
Control Equipment	Nil	C/s Area, m^2	0.0201

Flow Characteristics

Ambient Temp, °C	9.1	Velocity, m/s	13.81
Stack Temp, °C	158	Flow rate, Nm^3/hr	692

Emissions Details

Particulate matter, mg/Nm^3	45.7	**CPCB Standards**	115
Sulphur dioxide, mg/Nm^3	53.6		800
Oxides of Nitrogen, mg/Nm^3	70.8		800

Sampling and Analysis carried out as per IS:11255

Equipment Details : Aero vironment
Model No: SEA 90

Monitored by : Mr. Siva Ganesh – Env. Executive
Mr. Srinivasa Reddy - Env. Executive

Remarks : All values are well with in the limits as per CPCB/MoEF Norms and As per Consent Issued.

Checked by : A. Bhavana 22/12/14

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Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
Ref No:	STL/EHS/L16011/14	Time of Sampling	4:30 pm

STACK MONITORING REPORT

Details	D.G.Set-500 KVA Adit-III	Stack Height, m	3.0
Fuel Used	Diesel	Stack Diameter, m	0.16
Control Equipment	Nil	C/s Area, m^2	0.0201

Flow Characteristics

Ambient Temp, °C	9.0	Velocity, m/s	15.04
Stack Temp, °C	186	Flow rate, Nm^3/hr	707

Emissions Details

Particulate matter, mg/Nm^3	51.2	CPCB Standards	115
Sulphur dioxide, mg/Nm^3	58.5		800
Oxides of Nitrogen, mg/Nm^3	89.7		800

Sampling and Analysis carried out as per IS:11255

Equipment Details : Aero vironment
Model No: SEA 90

Monitored by : Mr. Siva Ganesh – Env. Executive
Mr. Srinivasa Reddy - Env. Executive

Remarks : All values are well with in the limits as per CPCB/MoEF Norms and As per Consent issued.

Checked by : A.Bhavana 22/12/14

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Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16018/14		

SOIL SAMPLE – FROM ADIT - II

S.No.	Parameters	Results
1	pH	6.94
2	Conductivity (10% Solution) (µs/cm)	208
3	Chlorides as Cl (mg/Kg)	195.7
4	Sodium as Na (mg/100g)	17.1
5	Potassium as K (mg/100g)	44
6	Phosphorous as P (Kg/Hec)	298.9
7	Nitrogen as N (Kg/Hec)	6,673.1
8	Calcium as Ca (mg/Kg)	1,178.4
9	Magnesium as Mg (mg/Kg)	166.7
10	Sulphate as SO_4 (mg/Kg)	247.0
11	Organic Carbon (%)	0.62
12	Sodium Absorption Ratio (SAR)	6.59
13	Texture	Silt loam
14	Grain Size Analysis	
	a) Sand (%)	31.3
	b) Silt (%)	43.8
	c) Clay (%)	25.0

Sample Collected By: Mr. Siva Ganesh – Env. Executive

Remarks: Analysis done as per Customer's request

Checked by : A. Bhavana 22/12/14

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Name of the Industry	M/S Himachal Pradesh Power Corporation Limited	Date of Sampling	13th Dec, 20
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 20
		Date of Reporting	22nd Dec, 20
REF No:	STL/EHS/L16017/14		

SOIL SAMPLE – FROM BARRAGE

S.No.	Parameters	Results
1	pH	7.06
2	Conductivity (10% Solution) (µs/cm)	232
3	Chlorides as Cl (mg/Kg)	215.3
4	Sodium as Na (mg/100g)	14.6
5	Potassium as K (mg/100g)	38
6	Phosphorous as P (Kg/Hec)	306.3
7	Nitrogen as N (Kg/Hec)	7,368.2
8	Calcium as Ca (mg/Kg)	1,237.3
9	Magnesium as Mg (mg/Kg)	202.4
10	Sulphate as SO_4 (mg/Kg)	312.8
11	Organic Carbon (%)	0.58
12	Sodium Absorption Ratio (SAR)	5.44
13	Texture	Silt loam
14	Grain Size Analysis	
	a) Sand (%)	16.7
	b) Silt (%)	56.7
	c) Clay (%)	26.7

Sample Collected By: Mr. Siva Ganesh – Env. Executive

Remarks: Analysis done as per Customer's request

Checked by : A. Bhavana 22/12/14

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Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16029/14		

WASTE WATER - FROM LABOUR CAMP -

S.No.	Parameter	Methods	As per APPCB/CPCB Limits	Results
1	pH	APHA 4500B	5. 5 – 9. 0	7.14
2	Total Dissolved Solids (mg/L)	APHA 2540D	2100	114
3	Total Suspended Solids (mg/L)	APHA 2540D	200	48
4	Oil & Grease (mg/L)	APHA 5520B	10	Nil
5	Chemical Oxygen Demand (mg/L)	APHA 5220B	250	43.5
6	Biological Oxygen Demand 3 days at 27°C (mg/L)	IS 3025 (Part 44)	30	11
7	Total Residual Chlorine (mg/L)	APHA 4500B	1.0	Nil

Sampling and Analysis carried out as per APHA

Sample collected by: Mr. Siva Ganesh – Env. Executive

Compiled by : A. Bhavani 22/12/14 Authorised by:

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Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 20
		Date of Reporting	22nd Dec, 20
REF No:	STL/EHS/L16021/14		

SOIL SAMPLE – FROM POWER HOUSE COMPLEX – AT DIVERTION TUNNEL

S.No.	Parameters	Results
1	pH	7.21
2	Conductivity (10% Solution) (µs/cm)	256
3	Chlorides as Cl (mg/Kg)	254.4
4	Sodium as Na (mg/100g)	16.9
5	Potassium as K (mg/100g)	43.5
6	Phosphorous as P (Kg/Hec)	339.1
7	Nitrogen as N (Kg/Hec)	.8,126.8
8	Calcium as Ca (mg/Kg)	1,217.6
9	Magnesium as Mg (mg/Kg)	166.7
10	Sulphate as SO_4 (mg/Kg)	279.8
11	Organic Carbon (%)	0.41
12	Sodium Absorption Ratio (SAR)	6.42
13	Texture	Silt loam
14	Grain Size Analysis	
	a) Sand (%)	20.0
	b) Silt (%)	53.3
	c) Clay (%)	26.7

Sample Collected By: Mr. Siva Ganesh – Env. Executive

Remarks: Analysis done as per Customer's request

Checked by : A. Bhavani 22/12/14 Authorized by :

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		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16022/14		

DRINKING WATER – FROM LABOUR CAMP AT RALLI

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Results
15	Fluoride as F (mg/L)	APHA 4500D	1.0	Nil
16	Silica as SiO_2 (mg/L)	APHA 4500C	---	1.6
17	Nitrite as NO_2 (mg/L)	APHA 4500B	---	Nil
18	Sodium as Na (mg/L)	APHA 3500B	---	2.1
19	Potassium as K (mg/L)	APHA 3500B	---	0.2
20	Cadmium as Cd (mg/L)	APHA 3500	0.01	Not Detected
21	Copper as Cu (mg/L)	APHA 3500B	0.05	Not Detected
22	Iron as Fe (mg/L)	APHA 3500B	0.3	Not Detected
23	Chromium as Cr^{+6} (mg/L)	APHA 3500B	0.05	Not Detected
24	Zinc as Zn (mg/L)	APHA 3500B	5	0.2
25	Total Coliform	---	Should be Absent	Absent
26	Fecal Coliform	---	Should be Absent	Absent

Sample Collected by : Mr. Siva Ganesh – Env. Executive

Remarks: Analysis done as per given sample.

Checked by : A. Bhowmik 22/12/14

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Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec,
		Date of Reporting	22nd Dec
REF No:	STL/EHS/L16022/14		

DRINKING WATER – FROM LABOUR CAMP AT RALLI

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Re
1	pH	APHA 4500B	6.5-8.5	
2	Taste	—	Agreeable	Agr
3	Odour	---	Agreeable	Agr
4	Color (Hazen Unit)	APHA 2120C	5	
5	Turbidity (NTU)	APHA 2130B	1	
6	Total Dissolved Solids (mg/L)	APHA 2540C	500	
7	Total Suspended Solids	APHA 2540D	---	
8	Total Hardness as $CaCO_3$ (mg/L)	APHA 2340C	200	
9	Total Alkalinity as $CaCO_3$ (mg/L)	APHA 2320B	200	
10	Calcium as Ca (mg/L)	APHA 3500B	75	
11	Magnesium as Mg (mg/L)	APHA 3500B	30	
12	Residual free Chlorine (mg/L)	APHA 4500B	0.2	
13	Chloride as Cl (mg/L)	APHA 4500B	250	
14	Sulphate as SO_4 (mg/L)	APHA 4500E	200	

Checked by : A. Bhowmik 22/12/14

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Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16024/14		

SURFACE WATER – FROM SULTEJ RIVER AT TRT RALLI

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Results
15	Fluoride as F (mg/L)	APHA 4500D	1.0	Nil
16	Silica as SiO_2 (mg/L)	APHA 4500C	---	28.1
17	Nitrite as NO_2 (mg/L)	APHA 4500B	---	Nil
18	Sodium as Na (mg/L)	APHA 3500B	---	30.3
19	Potassium as K (mg/L)	APHA 3500B	---	0.4
20	Cadmium as Cd (mg/L)	APHA 3500	0.01	Not Detected
21	Copper as Cu (mg/L)	APHA 3500B	0.05	Not Detected
22	Iron as Fe (mg/L)	APHA 3500B	0.3	0.3
23	Chromium as Cr^{+6} (mg/L)	APHA 3500B	0.05	Not Detected
24	Zinc as Zn (mg/L)	APHA 3500B	5	0.02
25	Total Coliform	---	Should be Absent	Present
26	Fecal Coliform	---	Should be Absent	Absent

Sample Collected by : Mr. Siva Ganesh – Env. Executive

Remarks: Analysis done as per given sample.

Checked by : A Bhowmick 22/12/14

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		Date of Reporting	22nd Dec
REF No:	STL/EHS/L16024/14		

SURFACE WATER – FROM SULTEJ RIVER AT TRT RALLI

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Re
1	pH	APHA 4500B	6.5-8.5	
2	Taste	—	Agreeable	Agr
3	Odour	—	Agreeable	Agr
4	Color (Hazen Unit)	APHA 2120C	5	
5	Turbidity (NTU)	APHA 2130B	1	
6	Total Dissolved Solids (mg/L)	APHA 2540C	500	
7	Total Suspended Solids	APHA 2540D	---	
8	Total Hardness as $CaCO_3$ (mg/L)	APHA 2340C	200	1
9	Total Alkalinity as $CaCO_3$ (mg/L)	APHA 2320B	200	
10	Calcium as Ca (mg/L)	APHA 3500B	75	
11	Magnesium as Mg (mg/L)	APHA 3500B	30	
12	Residual free Chlorine (mg/L)	APHA 4500B	0.2	
13	Chloride as Cl (mg/L)	APHA 4500B	250	
14	Sulphate as SO_4 (mg/L)	APHA 4500E	200	

Checked by : A Bhowmick 22/12/14

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TEST REPORT

Name of the Industry	M/S Himachal Pradesh Power Corporation Limited	Date of Sampling	13th Dec, 2014
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16026/14		

SURFACE WATER – FROM CONFLUENCE OF TANGLING KHADD

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Results
15	Fluoride as F (mg/L)	APHA 4500D	1.0	Nil
16	Silica as SiO_2 (mg/L)	APHA 4500C	---	1.2
17	Nitrite as NO_2 (mg/L)	APHA 4500B	--	Nil
18	Sodium as Na (mg/L)	APHA 3500B	---	2.7
19	Potassium as K (mg/L)	APHA 3500B	---	0.2
20	Cadmium as Cd (mg/L)	APHA 3500	0.01	Not Detected
21	Copper as Cu (mg/L)	APHA 3500B	0.05	Not Detected
22	Iron as Fe (mg/L)	APHA 3500B	0.3	0.08
23	Chromium as Cr^{+6} (mg/L)	APHA 3500B	0.05	Not Detected
24	Zinc as Zn (mg/L)	APHA 3500B	5	0.02
25	Total Coliform	---	Should be Absent	Present
26	Fecal Coliform	---	Should be Absent	Absent

Sample Collected by : Mr. Siva Ganesh – Env. Executive

Remarks: Analysis done as per given sample.

Checked by : A.Bhaskar 22/12/14

Authorized by: Ramakrishna

STARTECH LABS PVT. LTD.
2nd Floor, SMR Chambers, H.No. : 1-58/7,
Opp.: St. Ann's Jr. College, Madinaguda,
Hyderabad - 500 050, Telangana, INDIA.
Tel. : +91-40-23041900, 23041905, 40215094
E-mail: quality@startechlabs.com
[D.L.No. : 1/RR/AP/2004/AL/G]

19/11

STARTECH
QUALITY SERVICE IS OUR ST

TEST REPORT

Name of the Industry	M/S Himachal Pradesh Power Corporation Limited	Date of Sampling	13th Dec,
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec,
		Date of Reporting	22nd Dec,
REF No:	STL/EHS/L16026/14		

SURFACE WATER – FROM CONFLUENCE OF TANGLING KHADD

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Re
1	pH	APHA 4500B	6.5-8.5	7
2	Taste	---	Agreeable	Agre
3	Odour	---	Agreeable	Agre
4	Color (Hazen Unit)	APHA 2120C	5	
5	Turbidity (NTU)	APHA 2130B	1	
6	Total Dissolved Solids (mg/L)	APHA 2540C	500	
7	Total Suspended Solids	APHA 2540D	---	
8	Total Hardness as $CaCO_3$ (mg/L)	APHA 2340C	200	4
9	Total Alkalinity as $CaCO_3$ (mg/L)	APHA 2320B	200	
10	Calcium as Ca (mg/L)	APHA 3500B	75	1
11	Magnesium as Mg (mg/L)	APHA 3500B	30	
12	Residual free Chlorine (mg/L)	APHA 4500B	0.2	
13	Chloride as Cl (mg/L)	APHA 4500B	250	
14	Sulphate as SO_4 (mg/L)	APHA 4500E	200	

Checked by : A.Bhaskar 22/12/14

Authorized by: Ramakrishna

Approved Laboratory by MoEF, OHSAS 18001 and ISO 9001
Website: www.startechlabs.com E-mail: rambabu.g@startechlabs.com, startechlabs@gmail.com

2nd Floor, SMR Chambers, H.No. : 1-58/7,
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E-mail: quality@startechlabs.com
[D.L.No. : 1/RR/AP/2004/AL/G]

STARTECH LABS
QUALITY SERVICE IS OUR STRENGTH

TEST REPORT

Name of the Industry	M/S Himachal Pradesh Power Corporation Limited	Date of Sampling	13th Dec, 2014
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2014
		Date of Reporting	22nd Dec, 2014
REF No:	STL/EHS/L16028/14		

SURFACE WATER – FROM SULTEJ RIVER AT POWARI

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Results
15	Fluoride as F (mg/L)	APHA 4500D	1.0	Nil
16	Silica as SiO_2 (mg/L)	APHA 4500C	---	33.3
17	Nitrite as NO_2 (mg/L)	APHA 4500B	---	Nil
18	Sodium as Na (mg/L)	APHA 3500B	---	40.1
19	Potassium as K (mg/L)	APHA 3500B	---	0.6
20	Cadmium as Cd (mg/L)	APHA 3500	0.01	Not Detected
21	Copper as Cu (mg/L)	APHA 3500B	0.05	0.02
22	Iron as Fe (mg/L)	APHA 3500B	0.3	Not Detected
23	Chromium as Cr^{+6} (mg/L)	APHA 3500B	0.05	Not Detected
24	Zinc as Zn (mg/L)	APHA 3500B	5	0.02
25	Total Coliform	---	Should be Absent	Absent
26	Fecal Coliform	---	Should be Absent	Absent

Sample Collected by : Mr. Siva Ganesh – Env. Executive

Remarks: Analysis done as per given sample.

Checked by : A.B 22/12/14

Authorized by:

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[D.L.No. : 1/RR/AP/2004/AL/G]

STARTECH L
QUALITY SERVICE IS OUR STR

TEST REPORT

Name of the Industry	M/S Himachal Pradesh Power Corporation Limited	Date of Sampling	13th Dec, 2
Address	Shongtong-Karchham (Powari-Ralli) HEP (450 MW) Reckong-Peo, Distt., Kinnaur (H.P)-172107.	Date of Receipt	16th Dec, 2
		Date of Reporting	22nd Dec,
REF No:	STL/EHS/L16028/14		

SURFACE WATER – FROM SULTEJ RIVER AT POWARI

S.No.	Parameter	Methods	Desirable Limits As Per IS 10500	Res
1	pH	APHA 4500B	6.5-8.5	7.
2	Taste	—	Agreeable	Agre
3	Odour	—	Agreeable	Agre
4	Color (Hazen Unit)	APHA 2120C	5	
5	Turbidity (NTU)	APHA 2130B	1	0
6	Total Dissolved Solids (mg/L)	APHA 2540C	500	3
7	Total Suspended Solids	APHA 2540D	---	2
8	Total Hardness as $CaCO_3$ (mg/L)	APHA 2340C	200	21
9	Total Alkalinity as $CaCO_3$ (mg/L)	APHA 2320B	200	1
10	Calcium as Ca (mg/L)	APHA 3500B	75	6
11	Magnesium as Mg (mg/L)	APHA 3500B	30	12
12	Residual free Chlorine (mg/L)	APHA 4500B	0.2	N
13	Chloride as Cl (mg/L)	APHA 4500B	250	7
14	Sulphate as SO_4 (mg/L)	APHA 4500E	200	2

Checked by : A.B 22/12/14

Authorized by:

Approved Laboratory by MoEF, OHSAS 18001 and ISO 9001
Website: www.startechlabs.com E-mail: rambabu.g@startechlabs.com, startechlabs@gmail.com

PATEL ENGINEERING LTD

Shongtong-Karchham Hydroelectric Project (450 MW)
Reckong Peo, Kinnaur (H. P.) - 172 107

DETAIL OF MANPOWER IN SHONGTONG - KARCHHAM H. E. PROJECT (450 MW)

As on 07-01-2015

Sl. No.	Name of Employer/ Contractor	Himachali												Non-Himachali			TOTAL			GRAND TOTAL	Remarks (If any)
		From District Kinnaur									Rest of Himachal										
		MPAF			PAF/PAA/PAZ			Others													
		E	S	W	E	S	W	E	S	W	E	S	W	E	S	W	E	S	W		
1	**PATEL ENGINEERING LTD. HO Roll Staff/Employee**	-	-	-	-	-	-	2	2	-	23	2	2	22	17	9	**47**	**21**	**11**	**79**	
2	**PATEL ENGINEERING LTD. Project Roll Staff/ Employee**	-	-	14	-	-	53	-	-	12	-	8	54	-	3	20	-	**11**	**153**	**164**	
	TOTAL	-	-	14	-	-	53	2	2	12	23	10	56	22	20	29	**47**	**32**	**164**	**243**	

(No Private Transport has been taken for this Project)

SUMMARY:

A.	Percentage of Himachali (in Project Roll Staff)	86%
B.	Percentage of Kinnaur (in Project Roll Staff)	48%
C.	Percentage of Non-Himachali (in Project Roll Staff)	14%

INDEX

E Executive
S Supervisor
W Workmen

Annexure-I

PATEL ENGINEERING LTD.

Shongtong - Karchham HE Project (450 MW)

Reckong Peo, Kinnaur HP - 172 107

Detail of HO STAFF (as on 7-1-2015)

Sl. No.	Name of Employee	Designation	Category	Date of Joining	Native State	Wheather Transferred/ New Joining	Contact Detail
1	Amitava Mitra	General Manager (Projects))	Executive	10.12.2014	Non-Himachalli	Transferred from HO	amitava.mitra@pateleng.com
2	Col. (Retd) R. J. Srinivasa	AGM (P&A)	Executive	3/25/2014	Non-Himachalli	Transferred from Gongri	rj.srinivasa@pateleng.com
3	B. Taranath Shetty	DGM (Plant)	Executive	01.04.2013	Non-Himachalli	Transferred from Rampur	taranathshetty92@gmail.com
4	Jitender Kr Mehla	Deputy Manager (Elec.)	Executive	22.10.2012	Himachalli	New Joining	mehlajitenderkumar@gmail.com
5	Jaisingh Thakur	Officer (P&A)	Executive	19.11.2012	Himachalli	New Joining	jaisingh.thakur@pateleng.com
6	Kamlesh Kumar Sharma	Project Engineer (Civil)	Executive	26.11.2012	Himachalli	New Joining	kamlesh.sharma550@gmail.com
7	Joginder Kumar	Surveyor	Supervisor	16.10.2012	Himachalli	New Joining	jcivil.singh@gmail.com
8	Sanjay Kumar	Supervisor (Blasting/ Civil)	Supervisor	01.11.2012	Non-Himachalli	New Joining	na
9	Anshuman Prasad	Engineer (Mech)	Executive	04.12.2012	Himachalli	New Joining	anshuman.prasad@pateleng.com
10	Bhageshwari Prasad Sharma	Jr. Fitter	Workman	01.12.2012	Non-Himachalli	New Joining	na
11	Vinod Kumar	Project Engineer (Civil)	Executive	10.01.2013	Non-Himachalli	New Joining	vinod.vinod.kumar51@gmail.com
12	Sudershan Kumar Sharma	Store Officer	Executive	15.01.2013	Non-Himachalli	New Joining	sudershan.sharma@pateleng.com
13	Subhash Kumar Sharma	Asstt. Manager (Mech.)	Executive	15.01.2013	Himachalli	New Joining	subhashsharma456@gmail.com
14	Rajesh Kumar Sharma	Asstt. Manager (Civil)	Executive	02.02.2013	Himachalli	New Joining	sharmarajeshkumar54@yahoo.com
15	Kishor Kumar Guleria	Sr. Surveyor	Supervisor	18.02.2013	Himachalli	New Joining	kishorkumarguleria@yahoo.com
16	Ashoke Bhattacharjee	Asstt. Manager (Accounts)	Executive	26.02.2013	Non-Himachalli	New Joining	stkhep.accounts@pateleng.com
17	Amit Choudhary	Surveyor	Supervisor	11.03.2013	Himachalli	New Joining	amit.1985lakria@gmail.com
18	Rajender Singh Negi	Officer -(Admin)	Executive	12.03.2013	Non-Himachalli	Transferred from Rishikesh Yard	rsnegipateleng@gmail.com
19	Vishal Gupta	Jr. Officer - Accounts	Executive	15.03.2013	Himachalli	New Joining	vishal_gpt1984@yahoo.com
20	Gurdev Singh Rana	Engineer (Mech)	Executive	05.06.2013	Himachalli	Transferred from Rishikesh Yard	gurudev.rana@pateleng.com
21	Pratul Chandra Bera	Deputy Manager (Mech.)	Executive	10.06.2013	Non-Himachalli	New Joining	pratulbera1964@gmail.com
22	Rajeev Vikas Chandra	Officer (Stores)	Executive	16.07.2013	Non-Himachalli	Transferred from HO	vikas.chandra@pateleng.com
23	Vinay Bahadur Singh	Operator/ Driver	Workman	25.07.2013	Non-Himachalli	Transferred from Rishikesh Yard	na
24	Vinay Kumar Purohit	Engineer (Survey)	Executive	11/6/2013	Non-Himachalli	Transferred from Parwati	vinaypurohit.2008@rediffmail.com
25	Navneet Chand	Jr. Officer (Purchase)	Executive	1/1/2014	Himachalli	New Joining	
26	M. Kadirivelu	Asstt. Manager (Civil)	Executive	1/6/2014	Non-Himachalli	New Joining	kadirivelu1977@yahoo.com
27	Vias Dev Sharma	Deputy Manager (Elec.)	Executive	1/8/2014	Himachalli	Transferred from Rampur	
28	Saroj Kumar Routrey	Asstt. Manager (Mech.)	Executive	1/8/2014	Non-Himachalli	Transferred from Rampur	sarojroutrey69@gmail.com
29	Vinod Kumar Singh	Operator (DG)	Workman	1/9/2014	Non-Himachalli	Transferred from Rampur	NA
30	Loveen Thakur	Engineer (Civil)	Executive	2/1/2014	Himachalli	New Joining	loveen.thakur@pateleng.com
31	Ankur Chauhan	Engineer (Elect.)	Executive	2/1/2014	Himachalli	New Joining	er.ankurchauhan12@gmail.com
32	Krishana Chandra Rana	Asstt. Foreman (Civil)	Supervisor	2/3/2014	Non-Himachalli	Transferred from Rampur	
33	Vikas Raj	Engineer (Mech)	Executive	2/3/2014	Himachalli	New Joining	rajvikas900@gmail.com
34	Bhaskar Ch. Jana	Sr. Foreman (Mech.)	Supervisor	2/3/2014	Non-Himachalli	Transferred from Rampur	
35	Jagannath Rout	Sr. Welder	Workman	2/3/2014	Non-Himachalli	Transferred from Rampur	

Sl. No.	Name of Employee	Designation	Category	Date of Joining	Native State	Wheather Transferred/ New Joining	Contact Detail
36	Arvind Kumar Tripathi	Asstt. Foreman (Civil)	Supervisor	2/5/2014	Non-Himachalli	Transferred from Rampur	
37	Sanjay Kumar Gadhai	Jr. Officer (Stores)	Executive	2/5/2014	Non-Himachalli	Transferred from Rampur	sanjaykumarghadai@ymail.com
38	Parmanand Chaturwedy	Asstt. Foreman (Mech.)	Supervisor	2/18/2014	Non-Himachalli	New Joining	
39	Basanta Kand Pan	Blaster	Supervisor	2/4/2014	Non-Himachalli	Transferred from Rampur	
40	Mulk Raj	Mechanic	Workman	2/12/2014	Non-Himachalli	New Joining	
41	Parmanand	Operator (Compressor)	Workman	2/13/2014	Non-Himachalli	New Joining	
42	Dhyan Chand Sharma	Geologist	Executive	3/4/2014	Himachalli	New Joining	dhyanchand07@gmail.com
43	Diwan Singh Chauhan	Foreman (Civil)	Supervisor	5/2/2014	Non-Himachalli	New Joining	
44	Puran Chand	Engineer (Civil)	Executive	5/5/2014	Himachalli	New Joining	
45	Mohinder Singh	Asstt. Manager (Civil)	Executive	5/8/2014	Himachalli	Transferred from Rampur	prashar.patel@gmail.com
46	Kekh Ram Kaushal	Jr. Foreman (Mech.)	Supervisor	5/8/2014	Non-Himachalli	Transferred from Rampur	
47	Bimlendu Mohanty	Sr. Foreman (Mech.)	Supervisor	5/8/2014	Non-Himachalli	Transferred from Rampur	
48	Anil Kr. Kaushik	Sr. Admin. Asstt.	Supervisor	5/8/2014	Non-Himachalli	Transferred from Rampur	
49	Ramashish Mourya	Foreman (Mech.)	Supervisor	5/8/2014	Non-Himachalli	Transferred from Rampur	
50	Galthia Singh Gusain	Foreman (Civil)	Supervisor	5/9/2014	Non-Himachalli	New Joining	
51	Kanhu Charan Dass	Asstt. Foreman (Civil)	Supervisor	5/13/2014	Non-Himachalli	Transferred from Rampur	
52	Manish Kumar	Engineer (Civil)	Executive	5/31/2014	Himachalli	New Joining	manish_thakur26@yahoo.com
53	Yogesh Kumar Mishra	Surveyor	Supervisor	5/31/2014	Non-Himachalli	New Joining	yogeshkumarmishra@gmail.com
54	Mahesh Kumar	Engineer (Civil)	Executive	6/4/2014	Himachalli	New Joining	
55	Dharmendra Kr. Pandey	Works Manager	Executive	6/5/2014	Non-Himachalli	New Joining	dkpandey75@gmail.com
56	Neeraj Kumar	Project Engineer (QA/QC)	Executive	6/9/2014	Himachalli	New Joining	nrj.neerajkblsp7@yahoo.in
57	V. K. Joy	Senior (Foreman)	Supervisor	7/10/2014	Non-Himachalli	Transferred from Parwati	
58	Jaideep Kumar Prajapati	Manager (Civil/Survey)	Executive	7/14/2014	Non-Himachalli	New Joining	jaideep.prajapati@pateleng.com
59	Asheesh Dev	Engineer (Mech)	Executive	10/15/2014	Himachalli	New Joining	asheesdevsharma073@gmail.com
60	Abhinav Sharma	Engineer (Civil)	Executive	10/16/2014	Himachalli	New Joining	abhinav.sdgr@gmail.com
61	Deepak Divakaran	Sr. Accountant	Supervisor	10/31/2014	Non-Himachalli	Transferred from Teesta Low Dam	deepak.divakaran@pateleng.com
62	Subhash Chand Dutta	Mechanic	Workman	10/31/2014	Himachalli	Transferred from Rampur	
63	Khazan Singh Katoch	Assistant Manager (Civil)	Executive	11/3/2014	Himachalli	Transferred from Rampur	-
64	Avneesh Kumar	Engineer (Elect.)	Executive	10/28/2014	Himachalli	Transferred from Rampur	
65	Rakesh Kumar Upadhyay	Assistant Manager (Constn.)	Executive	11/3/2014	Non-Himachalli	Transferred from Rampur	
66	Sharvan Kumar	Engineer (QC)	Executive	11/4/2014	Non-Himachalli	Transferred from Rampur	
67	Brij Mohan Bahuguna	Works Manager (Civil)	Executive	11/3/2014	Non-Himachalli	Transferred from Rampur	
68	Munish Kumar Agan	Clerk (Store)	Workman	11/3/2014	Himachalli	Transferred from Rampur	
69	Suresh Singh	Mechanic	Workman	11/3/2014	Non-Himachalli	Transferred from Rampur	
70	Dev Raj Sahoo	Sr. Foreman (Mech.)	Supervisor	11/3/2014	Non-Himachalli	Transferred from Rampur	
71	Jaichand Tomar	Sr. Foreman (Civil)	Supervisor	11/3/2014	Himachalli	New Joining	
72	Surjeet Singh	Apprentice Engineer	Executive	11/3/2014	Himachalli	New Joining	
73	Mukesh Kumar Singh	Works Manager (Civil)	Executive	11/20/2014	Non-Himachalli	Transfer from Rampur site	
74	Vijay Prasad Gupta	Sr. Operator (H-V)	Workman	11/21/2014	Non-Himachalli	New Joining	
75	Gaurav Pathania	Apprentice Engineer	Executive	12/1/2014	Himachalli	New Joining	
76	Abhinav Kumar	Manager (Civil)	Executive	12/9/2014	Non-Himachalli	New Joining	
77	Sanat Kumar Banarjee	Manager (Stores)	Executive	12/16/2014	Non-Himachalli	New Joining	
78	Sanjay Sharma	AGM (Mech.)	Executive	12/22/2014	Non-Himachalli	New Joining	
79	Manoj Kumar Singh	Helper (Stores)	Workman	12/17/2014	Non-Himachalli	New Joining	

Sl. No.	Name of Employee	Designation	Category	Date of Joining	Native State	Wheather Transferred/ New Joining	Contact Detail

Particulars	Percentage
Himachalli	39%
Non-Himachalli	61%
TOTAL STRENGTH	**100%**

Cadre Wise Detail				TOTAL
Himachalli	**31**	**Non.Himachalli**	**48**	
Executive	25	Executive	22	**47**
Supervisor	4	Supervisor	17	**21**
Workman	2	Workman	9	**11**
				79

Annexure-H

5/10

PATEL ENGINEERING LTD.
Shongtong - Karchham HE Project (450 MW)
Reckong Peo, Kinnaur HP - 172 107

Detail of Project Roll Manpower (as on 07-01-2015)

Sl. No.	Employee No.	Name of Employee	Father's / Husbands Name	Designation	Date of Joining	Native State	Category	Class	Category	Gram Panchayat	Remarks
1	PEL-002	Brijesh Kumar	Sh. Ram Singh	All round Operator	03.12.2012	Non-Himachalli	Highly Skilled	Workman	Others	Others	Champawat
2	PEL-003	Shashi Kumar	Sh. Chand Kishor	LMV Driver	01.09.2012	Himachalli	Skilled	Workman	Others	Others	Kullu
3	PEL-005	Besar Singh	Sh. Balam Ram	Cook	06.12.2012	Himachalli	Semi Skilled	Workman	Others	Others	Mandi
4	PEL-006	Sukhwant Singh	Sh. Jeevan Singh	Khalasi	03.12.2012	Non-Himachalli	Semi Skilled	Workman	Others	Others	Amritsar
5	PEL-008	Narender Kumar	Sh. Tej Ram	Technical Supervisor	03.12.2012	Himachalli	Skilled	Supervisor	Others	Others	Mandi
6	PEL-007	Vijay Kumar	Sh. Shankar Dass	Khalasi	03.12.2012	Non-Himachalli	Semi Skilled	Workman	Others	Others	Kathua
7	PEL-011	Subhash Chand Sharma	Sh. Shali Ram Sharma	LMV Driver	01.01.2013	Himachalli	Skilled	Workman	Others	Others	Mandi
8	PEL-014	Sanjeev Kumar	Sh. Madan Lal	Cook Helper	12.01.2012	Himachalli	Unskilled	Workman	Others	Others	Shimla
9	PEL-016	Ravi Kumar	Sh. Daulat Ram	Jr. Electrician	2/1/2013	Himachalli	Semi Skilled	Workman	PAF	Khawangi	Kinnaur
10	PEL-017	Ganeshi Lal	Sh. Seva Sukh	Electrical Helper	2/1/2013	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
11	PEL-018	Rajesh Kumar	Sh. Jagdish Chand	HMV Driver	2/4/2013	Himachalli	Skilled	Workman	PAZ	Kothi	Kinnaur
12	PEL-019	Ravinder Kumar	Sh. Lt. Bhajan Singh	HMV Driver	2/4/2013	Himachalli	Skilled	Workman	PAZ	Kothi	Kinnaur
13	PEL-022	Karam Singh	Sh. Krishan Chand	JCB Operator	2/11/2013	Himachalli	Skilled	Workman	Others	Others	Mandi
14	PEL-023	Udya Shankar	Sh. Rajender Lal	Welder	2/14/2013	Himachalli	Skilled	Workman	Others	Others	Mandi
15	PEL-024	Sant Ram Sharma	Sh. Jai Kishan	Foreman	2/18/2013	Himachalli	Highly Skilled	Supervisor	Others	Others	Chamba
16	PEL-025	Tara Chand	Sh. Chhadoob Ram	Store Helper	20-02.2013	Himachalli	Unskilled	Workman	PAF	Mebar	Kinnaur
17	PEL-027	Vipin Kumar	Sh. Gautam Singh	Survey Helper	20-02.2013	Himachalli	Unskilled	Workman	PAF	Mebar	Kinnaur
18	PEL-028	Surya Parkash	Sh. Bhagat Singh	Survey Helper	20-02.2013	Himachalli	Unskilled	Workman	PAF	Mebar	Kinnaur
19	PEL-030	Deepak Kumar	Sh. Layak Ram	Jr. Welder	3/1/2013	Himachalli	Semi Skilled	Workman	MPAF	Powari	Kinnaur
20	PEL-031	Naresh Kumar	Sh. Sardar Chand	Auto Electrician	3/1/2013	Himachalli	Skilled	Workman	Others	Others	Bilaspur
21	PEL-032	Sunit Singh	Sh. Chamaru Ram	Sr. Electrician	3/1/2013	Himachalli	Highly Skilled	Workman	Others	Others	Chamba
22	PEL-033	Pawan Kumar	Sh. Dev Bhagti	HMV Driver	3/2/2013	Himachalli	Skilled	Workman	PAF	Khawangi	Kinnaur
23	PEL-034	Anant Ram	Sh. Dharam Bhag	HMV Driver	3/2/2013	Himachalli	Skilled	Workman	PAZ	Kothi	Kinnaur
24	PEL-035	Jagdish	Sh. Devi Ram	HMV Driver	3/2/2013	Himachalli	Skilled	Workman	PAF	Barang	Kinnaur
25	PEL-037	Mitra Chand	Sh. Ugar Sukh	LMV Driver	3/2/2013	Himachalli	Skilled	Workman	PAZ	Shudarang	Kinnaur
26	PEL-040	Reji Kumar	Sh. Nikku Ram	Technical Supervisor	3/5/2013	Himachalli	Skilled	Supervisor	Others	Others	Chamba
27	PEL-044	Khem Raj	Sh. Budhi Ram	Electrical Helper	3/5/2013	Himachalli	Skilled	Workman	Others	Others	Mandi
28	PEL-041	Devinder Kumar	Sh. Narpat Ram	Jr. JCB Optr.	3/9/2013	Himachalli	Semi Skilled	Workman	PAF	Barang	Kinnaur
29	PEL-042	Prem Parkash	Sh. Bhag Singh	Pharmacist	3/11/2013	Himachalli	Skilled	Workman	PAF	Powari	Kinnaur
30	PEL-050	Duni Chand	Sh. Budhiya Ram	Cook Helper	3/25/2013	Himachalli	Unskilled	Workman	Others	Others	Chamba
31	PEL-051	Davinder Pal	Sh. Bhajan Lal	JCB Operator	3/23/2013	Non-Himachalli	Skilled	Workman	Others	Others	Ropar
32	PEL-052	Devender Kumar	Sh. Brij Lal	JCB Operator	3/23/2013	Himachalli	Skilled	Workman	Others	Others	Mandi
33	PEL-054	Naseeb Singh	Sh. Guru Ram	Cook	01.04.2013	Himachalli	Semi Skilled	Workman	Others	Others	Chamba
34	PEL-055	Diwan Singh	Sh. Late. Labh Singh	Jr. Store Clerk	18.05.2013	Himachalli	Unskilled	Workman	Others	Others	Mandi
35	PEL-056	Rakesh Kumar	Sh. Kanwar Sukh	Store Attendant	20.05.2013	Himachalli	Semi Skilled	Workman	PAZ	Shudarang	Kinnaur
36	PEL-057	Jai Pal	Sh. Sonam Bodh	HMV Driver	22.5.2013	Himachalli	Skilled	Workman	PAF	Khawangi	Kinnaur
37	PEL-058	Desh Raj	Sh. Middle Singh	HMV Driver	22.5.2013	Himachalli	Skilled	Workman	PAZ	Kothi	Kinnaur
38	PEL-060	Chander Kant	Sh. Prem Singh	Electrical Helper	27.5.2013	Himachalli	Unskilled	Workman	Others	Others	Mandi
39	PEL-061	Chander Mohan	Sh. Dharam Sagar Negi	Meter Reader	01.06.2013	Himachalli	Skilled	Workman	MPAF	Barang	Kinnaur
40	PEL-063	Rohit Kumar	Sh. Shyam Sunder	Mechanical Helper	01.06.2013	Himachalli	Unskilled	Workman	MPAF	Powari	Kinnaur
41	PEL-064	Anirudh Kumar	Sh. Lachhbar	Electrical Helper	02.06.2013	Himachalli	Semi Skilled	Workman	PAZ	Kalpa	Kinnaur
42	PEL-065	Chander Kant	Sh. Lt. Ganga Chand	Mechanical Helper	02.06.2013	Himachalli	Unskilled	Workman	PAZ	Shudarang	Kinnaur
43	PEL-066	Joginder Singh	Sh. Puran Singh	LMV Driver	01.06.2013	Himachalli	Skilled	Workman	Others	Others	Mandi
44	PEL-068	Ravinder Kumar	Sh. Lok Nath Sharma	LMV Driver	14.06.2013	Himachalli	Skilled	Workman	PAZ	Kalpa	Kinnaur
45	PEL-070	Vidya Krishan	Sh. Lafan Sain	LMV Driver	7/5/2013	Himachalli	Skilled	Workman	PAF	Barang	Kinnaur

Sl. No.	Employee No.	Name of Employee	Father's / Husbands Name	Designation	Date of Joining	Native State	Category	Class	Category	Gram Panchayat	Remarks
46	PEL-071	Nokh Ram	Sh. Krishaniya Ram	Cook	6/25/2013	Himachalli	Semi Skilled	Workman	Others	Others	Shimla
47	PEL-072	Ranjeet Kumar	Sh. Chaudhary Ram	Tech. Supervisor (M)	17.06.2013	Himachalli	Skilled	Supervisor	Others	Others	Hamirpur
48	PEL-074	Ravi Kumar	Sh Roop Singh	Supervisor (Civil)	7/15/2013	Himachalli	Skilled	Supervisor	Others	Others	Hamirpur
49	PEL-076	Prem Singh	Sh. Anant Ram	Cook	8/12/2013	Himachalli	Semi Skilled	Workman	Others	Others	Kullu
50	PEL-078	Harinand Sharma	Sh. late Devi Chand Sharma	Cook	10/1/2013	Himachalli	Semi Skilled	Workman	Others	Others	Shimla
51	PEL-079	Rajesh Kumar	Sh. Bhag Chander	Store Helper	10/4/2013	Himachalli	Unskilled	Workman	Others	Labrang	Kinnaur
52	PEL-080	Dharmender Kumar	Sh. Param Ram	HMV Driver	10/8/2013	Himachalli	Skilled	Workman	Others	Others	Mandi
53	PEL-081	Someshwar Singh	Sh. Sanam Lal	Mech. Helper	11/7/2013	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
54	PEL-082	Neelam Kumar	Sh. Chet Ram	HMV Driver	10/8/2013	Himachalli	Skilled	Workman	Others	Others	Mandi
55	PEL-083	Rohit Raina	Sh. Lok Nath Raina	Mechanic	10/26/2013	Non-Himachalli	Skilled	Workman	Others	Others	Rajouri
56	PEL-084	Manoj Kumar	Sh. Prem Bhagat	Mech. Helper	10/28/2013	Himachalli	Unskilled	Workman	PAF	Barang	Kinnaur
57	PEL-085	Rajesh Kumar	Sh. Jagat Ram	Mechanic	10/25/2013	Himachalli	Skilled	Workman	Others	Others	Hamirpur
58	PEL-086	Rupi Kumar	Sh. Vikram Singh	Mech. Helper	11/13/2013	Himachalli	Unskilled	Workman	Others	Pangi	Kinnaur
59	PEL-087	Sunil Kumar	Sh. Dil Chand	Safety Assistant	11/13/2013	Himachalli	Semi Skilled	Workman	Others	Pangi	Kinnaur
60	PEL-088	Gian Prakash	Sh. Gopal Singh	Survey Helper	11/13/2013	Himachalli	Unskilled	Workman	Others	Pangi	Kinnaur
61	PEL-089	Laxmi Kant	Sh. Devi Nar	Survey Helper	11/13/2013	Himachalli	Unskilled	Workman	PAZ	Kalpa	Kinnaur
62	PEL-090	Harish Kumar	Sh. Roop Lal	Data Entry Operator	11/13/2013	Himachalli	Skilled	Workman	PAZ	Shudarang	Kinnaur
63	PEL-092	Himesh Kumar Sharma	Sh. Rajeshwar Sharma	Data Entry Operator	11/13/2013	Himachalli	Highly Skilled	Supervisor	Others	Others	Kullu
64	PEL-093	Dharmender Kumar	Sh. Nand Lal	Mech. Helper	11/19/2013	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
65	PEL-095	Krishan Kumar	Sh. Prem Chand	LMV Driver	11/14/2013	Himachalli	Skilled	Workman	MPAF	Powari	Kinnaur
66	PEL-094	Shiv Kumar	Sh. Sobhia Ram	HMV Driver	11/18/2013	Himachalli	Skilled	Workman	Others	Others	Chamba
67	PEL-096	Balwant Singh	Sh. Ami Chand	HMV Driver	11/19/2013	Himachalli	Skilled	Workman	Others	Others	Kangra
68	PEL-097	Sandeep Kumar	Sh. Roshan Lal	Excavator Operator	11/19/2013	Non-Himachalli	Skilled	Workman	Others	Others	Hoshiyarpur
69	PEL-103	Neeraj Kumar Vashtha	Sh. Subhas Chandra Sharma	Boomer Operator	11/19/2013	Non-Himachalli	Highly Skilled	Workman	Others	Others	Aligarh
70	PEL-98	Muneesh Banyal	Sh. Devender Singh Sunail	Tech. Supervisor (M)	1/1/2015	Himachalli	Skilled	Workman	Others	Others	Shimla
71	PEL-100	Mohd. Ashrit	Sh. Aurangzeb	Auto Electrician	11/25/2013	Non-Himachalli	Skilled	Workman	Others	Others	Kathua
72	PEL-104	Ravindra Singh	Sh. Surmuk Singh	Boomer Operator	11/26/2013	Non-Himachalli	Highly Skilled	Workman	Others	Others	Bijor
73	PEL-106	Narpat Ram	Sh. Jauni Ram	Excavator Operator	11/27/2013	Himachalli	Skilled	Workman	Others	Others	Mandi
74	PEL-102	Mingmar Lama	Sh. Laka Lama	Boomer Operator	26.11.2013	Non-Himachalli	Highly Skilled	Workman	Others	Others	Nepal
75	PEL-109	Mangal Dass	Sh. Ram Singh	Electrical Helper	12/26/2013	Himachalli	Unskilled	Workman	Others	Others	Shimla
76	PEL-110	Naresh Kumar	Sh. late Ganga Ram	Welder	1/3/2014	Himachalli	Skilled	Workman	Others	Others	Shimla
77	PEL-113	Harish Chand	Sh. Shiv Dass	Cook	2/3/2014	Himachalli	Semi Skilled	Workman	Others	Others	Kullu
78	PEL-114	Jiya Lal	Sh. Devi Ram	Cook Helper	2/3/2014	Himachalli	Unskilled	Workman	Others	Others	Shimla
79	PEL-115	Yogesh Kumar	Sh. Ghan Shyam	Helper	2/3/2014	Himachalli	Unskilled	Workman	PAF	Powari	Kinnaur
80	PEL-116	Shakti Kumar	Sh. Bhagwan Singh	Helper	2/3/2014	Himachalli	Unskilled	Workman	PAF	Powari	Kinnaur
81	PEL-117	Karam Singh	Sh. Uma Lal	Supervisor (Civil)	2/3/2014	Himachalli	Skilled	Supervisor	Others	Others	Mandi
82	PEL-118	Sunil Sharma	Sh. Prakash Chand	Cook Helper	2/7/2014	Himachalli	Unskilled	Workman	Others	Others	Hamirpur
83	PEL-119	Bhadr Sukh	Sh. Yangur	Driver (HMV)	2/10/2014	Himachalli	Skilled	Workman	PAZ	Kalpa	Kinnaur
84	PEL-120	Ajay Kumar Sharma	Sh. Kartar Dutt Sharma	Shotcrete Operator	2/12/2014	Himachalli	Highly Skilled	Workman	Others	Others	Shimla
85	PEL-121	Pankaj Negi	Sh. Vidya Sukh Negi	Driver (HMV)	2/12/2014	Himachalli	Skilled	Workman	PAZ	Shudarang	Kinnaur
86	PEL-122	Mohinder Singh	Sh. Ravan Ram	Survey Boy	2/17/2014	Himachalli	Unskilled	Workman	Others	Others	Chamba
87	PEL-123	Parveen Kumar	Sh. Bhisham Dass	Survey Boy	2/18/2014	Himachalli	Unskilled	Workman	MPAF	Powari	Kinnaur
88	PEL-124	Rakesh Kumar	Sh. Nand Lal	Tyre Fitter	2/18/2014	Himachalli	Skilled	Workman	Others	Others	Mandi
89	PEL-126	Som Dutt Sharma	Sh. Roshan Lal	Driver (HMV)	2/26/2014	Himachalli	Skilled	Workman	Others	Others	Bilaspur
90	PEL-127	Ram Charit Vishwakarma	Sh. Chander Shekhar Prasad	Boomer Operator	3/1/2014	Non-Himachalli	Highly Skilled	Workman	Others	Others	Sidhi
91	PEL-128	Daleep Singh Bisht	Sh. lt. Dhiraj Ram Bisht	Boomer Mechanic	3/4/2014	Himachalli	Highly Skilled	Workman	Others	Others	Shimla
92	PEL-129	Ramesh Kumar	Sh. Barichi Gupta	Boomer Operator	3/7/2014	Non-Himachalli	Highly Skilled	Workman	Others	Others	Basti
93	PEL-130	Paltu Hari	Sh. Lt. Chittaranjan Hari	Supervisor (Civil)	3/10/2014	Non-Himachalli	Skilled	Supervisor	Others	Others	North 24 P
94	PEL-131	Panna Lal	Sh. Ram Dass	Workshop Supervisor	4/7/2014	Himachalli	Skilled	Workman	Others	Others	Kullu
95	PEL-134	Chhotu Ram	Sh. Jagdish Chand	Cook Helper	4/9/2014	Himachalli	Unskilled	Workman	Others	Others	Hamirpur
96	PEL-132	Sanjeev Kumar Sharma	Sh. Ludermani Sharma	Electrician	4/7/2014	Himachalli	Skilled	Workman	Others	Others	Mandi
97	PEL-133	Raj Kumar	Sh. Avtar Singh	Electrician	4/7/2014	Himachalli	Skilled	Workman	Others	Others	Hamirpur

Sl. No.	Employee No.	Name of Employee	Father's / Husbands Name	Designation	Date of Joining	Native State	Category	Class	Category	Gram Panchayat	Remarks
98	PEL-135	Fanu Ram	Sh. Bralu Ram	HMV Driver	4/18/2014	Himachalli	Skilled	Workman	Others	Others	Shimla
99	PEL-136	Ramesh Kumar	Sh. Biri Singh	Shotcrete Optr.	4/19/2014	Himachalli	Highly Skilled	Workman	Others	Others	Mandi
100	PEL-137	Jagdish Kumar	Sh. Amarjeet Singh	LMV Driver	03.05.2014	Himachalli	Skilled	Workman	Others	Others	Mandi
101	PEL-138	Pravesh Kumar	Sh. Bhim Sen	LMV Driver	03.05.2014	Himachalli	Skilled	Workman	Others	Others	Kullu
102	PEL-139	Chander Prakash	Sh. Sonam Negi	HMV Driver	08.05.2014	Himachalli	Skilled	Workman	PAF	Khawangi	Kinnaur
103	PEL-140	Raj Kumar	Sh. Karan Bahadur	Boomer Operator	5/5/2014	Himachalli	Highly Skilled	Workman	Others	Others	Shimla
104	PEL-141	Sunil Negi	Sh. Sanam Lal	Mechanical Helper	5/5/2014	Himachalli	Unskilled	Workman	PAF	Powari	Kinnaur
105	PEL-142	Suresh Kumar	Sh. Attar Singh	HMV Driver	5/9/2014	Himachalli	Skilled	Workman	PAZ	Kalpa	Kinnaur
106	PEL-143	Arjun Kumar	Sh. Basu Dev	Jr. Electrician	5/8/2014	Himachalli	Semi Skilled	Workman	Others	Others	Shimla
107	PEL-145	Sandeep Kumar	Sh. Birbal Singh Negi	LMV Driver	5/9/2014	Himachalli	Skilled	Workman	Others	Duni	Kinnaur
108	PEL-146	Rameshwar Sharma	Sh. Chandrapal Sharma	Batching Plant Operator	5/9/2014	Non-Himachalli	Skilled	Workman	Others	Others	Aligarh
109	PEL-149	Sandeep Kumar Kaushik	Sh. Rajendra Prasad Kaushik	Foreman (Batching Plant)	5/9/2014	Non-Himachalli	Highly Skilled	Supervisor	Others	Others	Hathras
110	PEL-147	Vinay Kumar Singh	Sh. Uma Shankar Singh	Store Assistant	5/11/2014	Non-Himachalli	Skilled	Supervisor	Others	Others	Varanasi
111	PEL-148	Mohinder Singh	Sh. Atma Ram	Attendant Q. C.	5/13/2014	Himachalli	Semi Skilled	Workman	Others	Others	Kangra
112	PEL-150	Naresh Kumar	Sh. Devi Chand	Cook Helper	7/28/2014	Himachalli	Unskilled	Workman	Others	Others	Shimla
113	PEL-151	Pritam Dass	Sh. Lt. Garib Dass	Cook Helper	8/6/2014	Himachalli	Unskilled	Workman	Others	Others	Hamirpur
114	PEL-153	Vipan Kumar	Sh. Joginder Singh	Shotfirer	10/14/2014	Non-Himachalli	Skilled	Workman	Others	Others	Hoshiyarpur
115	PEL-154	Shiv Kumar	Sh. Bhagat Ram	Log-Keeper	11/4/2014	Himachalli	Unskilled	Workman	MPAF	Powari	Kinnaur
116	PEL-155	Anil Kumar	Sh. Ram Charan Sharma	Cook	11/4/2014	Himachalli	Semi Skilled	Workman	Others	Others	Solan
117	PEL-156	Dinesh Kumar	Sh. Chet Ram	All round Operator	11/6/2014	Himachalli	Highly Skilled	Workman	Others	Tikkry	Mandi
118	PEL-157	Vikram Singh	Sh. Geeta Ram	LMV Driver	11/14/2014	Himachalli	Skilled	Workman	MPAF	Powari	Kinnaur
119	PEL-158	Raj Kumar	Sh. Jai Nand	HMV Driver	11/14/2014	Himachalli	Skilled	Workman	Others	Sangla	Kinnaur
120	PEL-159	Devi Chand	Sh. Layak Ram	LMV Driver	11/14/2014	Himachalli	Skilled	Workman	Others	Nathpa	Kinnaur
121	PEL-160	Narbu Gialchhan	Sh. Dandu Ram	HMV Driver	11/14/2014	Himachalli	Skilled	Workman	Others	Karla	Kinnaur
122	PEL-161	Janak Raj	Sh. Bali Ram	HMV Driver	11/15/2014	Himachalli	Skilled	Workman	Others	Barog	Shimla
123	PEL-162	Mohan Mahanty	Sh. Nakula Mahanty	HEM Mechanic	11/15/2014	Non-Himachalli	Skilled	Workman	Others	Tentulidiha	Khurda
124	PEL-163	Naveen Kumar Sharma	Sh. Bhoo Dev Prasad Sharma	Boomer Operator	11/16/2014	Non-Himachalli	Highly Skilled	Workman	Others	Dehra	Buland Sehar
125	PEL-164	Harish Kumar	Sh. Himmat Ram	Electrician	11/18/2014	Himachalli	Skilled	Workman	Others	Samaoh	Mandi
126	PEL-165	Dil Sukh	Sh. Bhim Sen	Cook Helper	11/15/2014	Himachalli	Unskilled	Workman	Others	Matla	Kinnaur
127	PEL-166	Subhash Chand	Sh. Balwant Singh	Cook Helper	11/18/2014	Himachalli	Unskilled	Workman	Others	Beru	Mandi
128	PEL-168	Prem Kumar	Sh. Mangal Sain	LMV Driver	11/21/2014	Himachalli	Skilled	Workman	PAF	Barang	Kinnaur
129	PEL-169	Sanam Ram	Sh. Chhering Dub	LMV Driver	11/21/2014	Himachalli	Skilled	Workman	PAF	Barang	Kinnaur
130	PEL-170	Krishan Kumar	Sh. Gopal Chand	HMV Driver	11/21/2014	Himachalli	Skilled	Workman	Others	Chansu	Kinnaur
131	PEL-171	Arjun Singh	Sh. Ramesh Chand	HMV Driver	11/21/2014	Himachalli	Skilled	Workman	Others	Chansu	Kinnaur
132	PEL-172	Rakesh Kumar	Sh. Govind Singh	HMV Driver	11/22/2014	Himachalli	Skilled	Workman	Others	Meeru	Kinnaur
133	PEL-173	Yogesh	Sh. Paldan Nargu	Batching Plant Operator	11/24/2014	Himachalli	Skilled	Workman	PAF	Powari	Kinnaur
134	PEL-174	Shiv Kumar	Sh. Chattar Singh	HMV Driver	11/25/2014	Himachalli	Skilled	Workman	PAF	Barang	Kinnaur
135	PEL-176	Sanjay Kumar	Sh. Nar Bahadur	HMV Driver	11/26/2014	Himachalli	Skilled	Workman	PAF	Khawangi	Kinnaur
136	PEL-177	Jitender Singh	Sh. Vinod Kumar	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Tangling	Kinnaur
137	PEL-178	Raj Krishan	Sh. Mal Dass	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	MPAF	Tangling	Kinnaur
138	PEL-179	Ravinder Kumar	Sh. Jhar Bhag	Log-Keeper	12/1/2014	Himachalli	Unskilled	Workman	MPAF	Tangling	Kinnaur
139	PEL-181	Man Mohan	Sh. Prem Sagar	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	MPAF	Tangling	Kinnaur
140	PEL-182	Chhering Dorje	Sh. Palas Ram	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	MPAF	Tangling	Kinnaur
141	PEL-183	Kewal Krishan	Sh. Lal Chand	Cook Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
142	PEL-184	Dev Kumar	Sh. Jarsukh	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
143	PEL-185	Tara Chand	Sh. Nar Kumar	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
144	PEL-186	Jeevan Singh Negi	Sh. Gokal Singh Negi	Helper (General)	12/1/2014	Himachalli	Unskilled	Workman	MPAF	Khawangi	Kinnaur
145	PEL-187	Vijay Kumar	Sh. Sohan Singh	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	MPAF	Khawangi	Kinnaur
146	PEL-188	Sameer Chand	Sh. Deva Singh	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
147	PEL-189	Anil Kumar	Sh. Jog Dyan	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
148	PEL-190	Vinya Devi	Sh. Panma Ram	Helper (General)	12/1/2014	Himachalli	Unskilled	Workman	PAF	Barang	Kinnaur
149	PEL-191	Shamsher Singh	Sh. Tandub Ram	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Barang	Kinnaur

Sl. No.	Employee No.	Name of Employee	Father's / Husbands Name	Designation	Date of Joining	Native State	Category	Class	Category	Gram Panchayat	Remarks
150	PEL-192	Raj Chander	Sh. Mitter Dev	Log-Keeper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Barang	Kinnaur
151	PEL-194	Anil Kumar	Sh. Nar Bhadur	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Khawangi	Kinnaur
152	PEL-195	Satish Kumar	Sh. Shyam Chand	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Mebar	Kinnaur
153	PEL-196	Chet Ram	Sh. Daya Chand	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Mebar	Kinnaur
154	PEL-197	Moti Lal	Sh. Kesru Ram	Log-Keeper	12/1/2014	Himachalli	Unskilled	Workman	PAF	Barang	Kinnaur
155	PEL-198	Hans Raj	Sh. Baldev Singh	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	MPAF	Ralli	Kinnaur
156	PEL-199	Divesh	Sh. Thap Singh	Helper (General)	12/1/2014	Himachalli	Unskilled	Workman	PAZ	Kalpa	Kinnaur
157	PEL-200	Kiran Kumar	Sh. Narjeet	Helper (General)	12/1/2014	Himachalli	Unskilled	Workman	PAZ	Brelingi	Kinnaur
158	PEL-201	Bharat Bhushan	Sh. Muker Singh	Mech. Helper	12/1/2014	Himachalli	Unskilled	Workman	PAZ	Shudarang	Kinnaur
159	PEL-202	Dinanath Thakur	Sh. Padam Singh Thakur	Compounder	12/1/2014	Himachalli	Highly Skilled	Supervisor	Others	Darmot	Kullu
160	PEL-203	Vishnu Budha	Sh. Induk Budha	Cook	12/2/2014	Non-Himachalli	Semi Skilled	Workman	Others	Nepal	Nepal
161	PEL-204	Karan Bahadur	Sh. Man Bahadur	Boomer Operator	12/2/2014	Non-Himachalli	Highly Skilled	Workman	Others	Abidhara	Nepal
162	PEL-205	Rakesh Mingwal	Sh. Udai Mingwal	Boomer Operator	12/2/2014	Non-Himachalli	Highly Skilled	Workman	Others	Kothagi	Rudraprayag
163	PEL-206	Raj Kumar	Sh. Pune Ram	Loader Operator	11/24/2014	Himachalli	Skilled	Workman	Others	Averi	Kullu
164	PEL-207	Chander Pal	Sh. Nathlu	Sweeper	12/5/2014	Non-Himachalli	Unskilled	Workman	Others	Rawanpur	Saharanpur

ABSTRACT

Cadre Wise (Himachalli)	
Himachalli	**141**
Executive	0
Supervisor	8
Workmen	133
Non-Himachalli	**23**
Executive	0
Supervisor	3
Workman	20

Cadre Wise (MPAF/PAF/PAA/PAZ)	
MPAF	**14**
Executive	0
Supervisor	0
Workman	14
PAF/PAA/PAZ	**53**
Executive	0
Supervisor	0
Workman	53

Kinnaur	**79**
Executive	0
Supervisor	0
Workman	79
Rest of Himachal	**62**
Executive	0
Supervisor	8
Workman	54

ORIGIN-WISE EMPLOYMENT DETAIL:		
Origin	Employment Provided	Percentage
Himachalli	141	86%
Shimla	14	10%
Kinnaur	79	56%
Mandi	21	15%
Kullu	8	6%
Bilaspur	2	1%
Chamba	7	5%
Lahul & Spiti	-	0%
Sirmour	-	0%
Hamirpur	7	5%
Kangra	2	1%
Solan	1	1%
Una	-	0%
Himachalli	**141**	86%
Non-Himachalli	23	14%
Total Strength	164	

CATEGORY-WISE:		
Category	Employment Provided	Percentage
MPAF	14	9%
PAF	36	22%
PAA	0	0%
PAZ	17	10%
Others	97	59%
TOTAL	**164**	

PANCHAYAT - WISE EMPLOYMENT:		
Panchayat		Employment Given
Barang		12
Khawangi		16
Powari		11
Mebar (Ralli)		5
Kothi		4
Pangi		3
Kalpa		6
Duni		1
Brelingi		1
Shudarang		6
TOTAL		**65**

Particulars	No's	Percentage
Total Employment Provided	164	
Total Employment to MPAF/PAF/PAA/PAZ	71	43%
Employment to Himachalli (Other than PAF/PAA)	70	43%
Employment to others	23	14%

Category	No's of Workmen
Unskilled	55
Semi Skilled	18
Skilled	72
Highly Skilled	19
TOTAL	**164**