

DETAILED PROJECT REPORT
INTEGRATED WATERSHED MANAGEMENT PROGRAMME
BHUNERHERI-II PATIALA PUNJAB



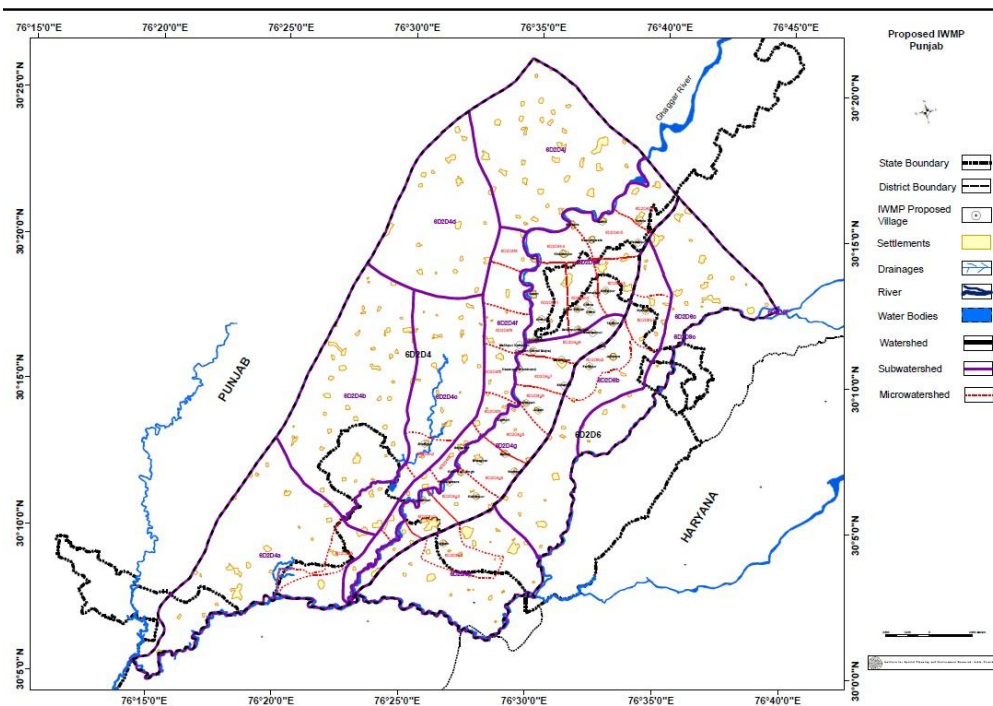
**DIVISIONAL SOIL CONSERVATION OFFICER PATIALA/
ADC DEVELOPMENT CUM PROJECT MANAGER IWMP PATIALA
DEPARTMENT OF SOIL AND WATER CONSERVATION PUNJAB**

COMPILED BY
THE SOCIETY FOR PROMOTION AND CONSERVATION OF
ENVIRONMENT
CHANDIGARH

IWMP BHUNERHERI-II

An area of 4050ha is proposed for treatment under IWMP Bhunerheri II batch 2012-13 at a total cost of Rs 486 lakhs covering 39 villages of Bhunerheri block of Patiala district. These villages are located mostly on the left bank of Ghaggar River. The villages are mostly flood plain of Ghaggar River which enter the project area near Ghanaur and grow the boundary of Ghanaur and Bhunarheri block. The Bhakhra main line flows north to south and canal crosses the river through a due (conduit) near Ghanaur. Ghuram distributory takes off from the BML near village Surala Kala and irrigate major part of block A of the project area. Haryana State boundary ingress the area near village Tiwana and Tasalpur. Patiala, Rajpura & Ambala are almost equidistant from Block A

Area is divided into 3 blocks and block A- includes the village Tiwana, Tasalpur, Marhu, Naurangwala, Sarkapra, Khalisapur, Pur and Arnauli which is surrounded by Ghaggar River on north-west and Haryana boundary on south and south west.



Problems related to Ghaggar River

Ghaggar river has two unique features firstly unlike other rivers it does not end with draining into sea or forming tributary of any other river and then joins the sea.

Secondly, it originate from Shivalik Hills forming part of Haryana (Markanda, Tangri), Punjab (Patiala Ki Rao & Jainti Devi Ki Rao) and Himachal Pradesh draining-near

Pinjore. This foot hill area produce ferocious torrents and flash floods giving Ghaggar a typical character of flood producing river.

Thirdly, it mostly traverses through flat areas of Patiala-Amabla where during floods, it inundate large adjoining lands and cause extensive damage to land and property.

Fourthly, it has of late become a sewerage disposal drain for towns and big villages situated on its banks and cause pollution problem.

Lastly, hundreds of tube-wells lift its water for irrigation from both of its banks. This water not being of good quality, cause soil pollution and soil alkalinity in the soils of flood plains.

- The river goes on traversing through lands of Punjab and Haryana cause local drainage problems.
- Individual states keep on spending money on various Ghaggar related bank erosion, inundation and pollution related problems but no comprehensive plan involving all the involved states was implement. Planning commission wanted to spend some Rs.1100 crores on a comprehensive plan but states could not agree to a joint strategy due to related water sharing disputes.
- The dilemma continues and each state is planning place meal solutions; IWMP in Patiala is one such an attempt.



1. Water Resources

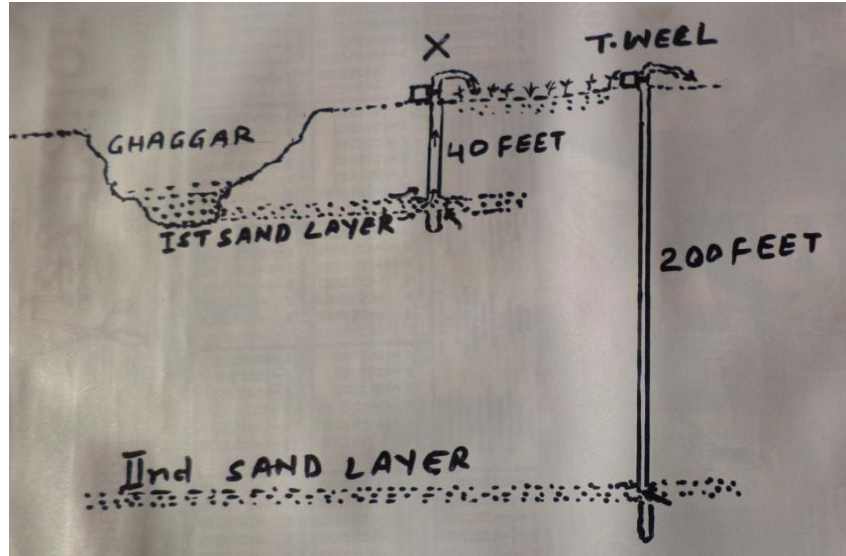
a) Depleting ground water:

Due to over-withdrawal by large number of tube-wells particularly for paddy crop, the water table is falling @30 to 50cm each year. This is in spite of the

fact that ground water is recharged by network of unlined distributaries and minors at Ghaggar river.

b) Contamination of ground water:

There are mainly three sources. One is the polluted water of Ghaggar river which is sucked towards the adjoining lands when tube-wells extruded create pressure difference towards the land. Second is stagnating pond waters which have become sinks of village sewerage water. The pesticide and nitrate pollution is the third one.



c) Flooding by Ghaggar:

When even heavy rains occur in the catchment areas, particularly Shivalik, the level of river rises, it spreads in the flood plains and inundate large patches of land. The damage to standing crops is quite common.

d) Inundation in local depressions:

The canal not works in bed from Bhakhra mainline where siphons have not been provided to allow overland flow at all possible locations. The obstruction of natural flow was cause inundation in local depressions.

8 PROJECT AT A GLANCE

General Information		
1.	Name of the Sub Watershed	Bhunerheri II
2.	Name of the Block	Bhunerheri
3.	Name of the District	Patiala
4.	Geographical Area of the Watershed	4885 ha./Effective Area 4050 ha
5.	Micro Watershed consist of Watershed and Watershed Codes	6D2D4g7, 6D2D4g6 , 6D2D4g5, 6D2D4g4, 6D2D4g3, 6D2D4g8
6.	Major Water Source	Canal Irrigation & Tube wells
7.	River flowing nearby the Watershed Area	Ghaggar
8.	Livelihood Options	Agriculture, Animal Husbandry, labour,
Demography		
9.	Population	26683
10.	Number of Males	14062
11.	Number of Females	12621
Agriculture		
12.	Major Crops and Vegetables	Paddy, , Wheat, Barley, Potato, Tomato, Brinjal, Lady Finger, Peas
13.	Marketing	Local, Bhunerheri, Patiala,
Horticulture		
14.	Major Crops	Kinnow, Gauva, Jammun, Ber,

15.	Marketing	Patiala,
Animal Husbandry		
16.	Families involved in Animal Husbandry	2692
17.	Livestock	Buffalos, Cow, Goat, Sheep
18.	Daily Milk Production	Average 5 to 7 Liter / Family
Land Characteristics		
19.	Slope	Mild (0-3%)
20.	Erosion	Slight to Moderate
Soil Characteristics		
21.	Soil Depth	Deep
22.	pH	7.1 to 8.6

List of entry point activities finalized for each project village

Sr. No	Name of Village	Geographical Area of the village (Ha)	Treatable Area (Ha)	4% funds for EPA(Rs)	Name of Entry Point Activities
1	Tasalpur	50	49	23321	In front of Sher Singh house repair of ring road and in front of Lal Singh house repair of pacca ring road
2	Sirkapra	96	93	44775	Boundary wall of graveyard and labour component fom MNREGA
3	Tiwana	128	124	59701	Paving concrete path of Gurdwara 18m long and 2m wide, bath room in gurdwara
4	Naurangwala	135	131	62965	Brick on edge soling of street 60m long and and 3m wide
5	Marhu	230	223	107274	Culverts in village streets 6m wide 2No,4.5m long 5No
6	Khalaspur	77	75	35914	Linking of main pond with pond near school through pacca 50m channel for surplus water disposal
7	Hadana	166	161	77424	Submersible motor in Govt Primary School 30m brick on edge flooring on path to graveyard 30X2.5m
8	MalikpurKamboan	99	96	46175	Submersible motor for water fitting in Govt .Primary School building
9	Abdulpur	70	68	32649	Submersible motor in Gurdwara with fitting system
10	Mukhmailpur	82	80	38246	Submersible motor and water storage tank in SC Mohala
11	Sakhupur	56	54	26119	Near GugaMari Pacca channel and culvert 10mX1mX1m to cross the road
12	Nayamatwala	78	76	36380	Pulley near Gurdev Singh house 3.6m wide across Phirmi road 0.45mX0.45m
13	Tajalpur	150	146	69962	Floor pacca in cremation ground and tiles on the roof
14	Chirva	52	51	24253	Graveyard renovation with shed and tins Graveyard SC/ST - complete shed construction
15	Chirvi	35	34	16324	Pacca flooring of Dharamsala compound
16	Bhadurpur	73	71	34048	Pullies needs to be repaired and lowered
17	SalampurBallian	45	44	20988	Pacca parapet around Banyan tree in front of temple Disposal of sewerage water below the road near Ravidas temple
18	DhandiMajra	76	74	35447	Repair and renovation of water disposal channels of the village

19	Mashingan	400	389	186564	In Shiv Mandir Site construction of hall/room for devotees and pacca floors
20	Tora	50	49	23321	Laying of roof over shed of village graveyard
21	Jelbhera	67	65	31250	Repaid of drain near Mari for better sanitation
22	Faridpur	96	93	44775	Repair and renovation of street channels for disposal of sewerage water
23	Julkan	154	150	71827	Submersible motor in Harijan Dharamsala and repair of Dharamsala
24	Akbarpur	64	62	29850	3 to 4 solar lights at common places in the village
25	Hasanpur	69	67	32182	Repair of shed of graveyard
26	AlipurSikhan	65	63	30317	Putting gate at the graveyard general SC graveyard, construction of shed
27	Bhambuan	82	80	38246	Concrete flooring of compound of dharamsala 30mX20m
28	Kapoori	54	52	25186	Near Ghaggr Ghat on phirni crossing, two pacca pullies on water courses
29	Mehon	220	214	102610	Submersible motor in Balmiki Mohala ward no 3 and drinking water Haudi and 30m pipeline
30	Arnauli	82	80	38246	Pacca parapet on Graveyard for sitting of people
31	Shadipur	150	146	69962	Street lining from Pir Dargah to the house of Mohit Singh 150X2.5m
32	Noorpur	60	58	27985	Pullies on streets in the village
33	Bhangran	102	99	47574	Pacca floor of Dharamsala and plaster of walls
34	KheriRaju Singh	117	114	54570	Submersible motor in village school and drinking water arrangement
35	Bhashmara	130	126	60633	Pacca floor in Graveyard, brick on edge in streets
36	Jellahheri	156	152	72760	Construction of shed in the graveyard and repair of second shed
37	Rajgarh	72	70	33582	Not covered as there was dispute reported to the team
38	Kishanpur	98	95	45708	Not covered as there was big dispute on activities and no convergence
39	Pur	182	177	84887	Construction shed at a common place for yatris in front of Gurdwara
	TOTAL		4050	1944000	

List of natural resource management works in Bhunerheri-2 project

Sr.No	Name of Village	Area of the village (Ha)	Treatable Area (Ha)	56% NRM budget Rs.	Name of activities identified
1	Tasalpur	50	49	326488	<ul style="list-style-type: none"> - Retaining wall of pond 50mX1.5m near Gurdwara - Water disposal channels 100m to carry runoff water to pond - Laser leveling 60 acre
2	Sirkapra	96	93	626856	<ul style="list-style-type: none"> - Rainwater disposal from pond to Ghaggar 150mX0.50m pipeline + outlet at Ghaggar - 130m u/g pipeline (0.30m dia) for second pond into Ghaggar with outlet - Earth filling of Dharamsala 0.5acre
3	Tiwana	128	124	835808	<ul style="list-style-type: none"> - The pond on western side along path to be widened, renovated, divided into 2 parts, fresh water and sewerage water to be separated - 140mX1.5m retaining wall - 7acre GP land leveling
4	Naurangwala	135	131	881516	<ul style="list-style-type: none"> - Retaining wall of pond 250mX2.0m ht and repair of existing wall of ramp - Laser leveling 150acre - Gypsum application 50acre
5	Marhu	230	223	1501843	<ul style="list-style-type: none"> - Raising of retaining wall of pond by 0.5mX100m - Bank protection work near bridge 40m+20m – RW RCC 5m high in steps - Laser leveling 400acre
6	Khalaspur	77	75	502791	<ul style="list-style-type: none"> - From main pond near school, 500m open channel 0.45X0.45m up to Pur chowk from Shamshan ghat pond to Pur chowk 50m open channel 0.45X0.45m Pur chowk along the road 1350m u/g 0.30cm dia RCC pipe to discharge water into Ghaggar
7	Hadana	166	161	1083939	<ul style="list-style-type: none"> - 80m retaining wall of pond of harijan mohala 30m pipeline and drop structure in Ghaggar - Chute type structure at the end of pipeline to drop water into Ghaggar from village pond - One inlet, 160m RCC 12" pipe + drop structure to dispose of sewerage water into Ghaggar
8	Malikpur Kamboan	99	96	646445	<ul style="list-style-type: none"> - 300mm, 500m pipeline from pond to Ghaggar with drop structure at the end - Retaining wall of pond 50mX2m - 450mm, 300m pipeline along the minor to discharge runoff and irrigation
9	Abdulpur	70	68	457083	<ul style="list-style-type: none"> - 150acre laser leveling - Ground water recharge 2 units for rainwater accumulating in depressions

10	Mukhmailpur	82	80	535440	<ul style="list-style-type: none"> - Gatria pond SC Mohalla retaining wall raising 38mx0.5m and 52mx0.5m - Ramp two 8m long - In pond U/G RCC pipeline 250mx0.225m dia with monoblock engine 7.5 HP complete water lifting system
11	Sakhupur	56	54	365666	<ul style="list-style-type: none"> - Lined water course 250mX0.9mX0.6mm in place of kacha khal to connect Guga mari to pond in shamlat on west side - Water disposal in two adjoining ponds + 50m water course in east side pond + renovation cleaning - Haudi near pond for water lifting
12	Nayamatwala	78	76	509321	<ul style="list-style-type: none"> - 60m retaining wall of pond 1m height - 600m 12" dia pipeline from pond to drain along the road – MNREGA labor
13	Tajalpur	150	146	979463	<ul style="list-style-type: none"> - 160m retaining wall of village pond height 2m on Gurdwara side up to road. - UG pipeline 10" dia for 50acre shamlat land length 800m to carry water of 2 T.wells
14	Chirva	52	51	339547	<ul style="list-style-type: none"> - Near Harijan basti on western side, retaining wall of pond to be raised 60mX40m = 100m - Pacca water course 20m – 0.9X0.6m for water entry
15	Chirvi	35	34	228541	<ul style="list-style-type: none"> - Excavation of new pond 30mX30m, inlet and outlet, engine to lift water and 100m long RCC pipeline 10" dia
16	Bhadurpur	73	71	476672	<ul style="list-style-type: none"> - 170 acre laser leveling covering all families of the village
17	SalampurBalian	45	44	293839	<ul style="list-style-type: none"> - Deepening and renovation of pond in Shamlat grazing land - Retaining walls – 700mX1m - 50acre laser leveling
18	DhandiMajra	76	74	496261	<ul style="list-style-type: none"> - Retaining wall of village pond 60mX2.5m - Laser leveling 100acre - Gypsum application 20acre - One set ground water recharge
19	Mashingan	400	389	2611900	<ul style="list-style-type: none"> - Village pond on Faridpur road- 400m 0.30m dia pipeline along Faridpur road upto drain with inlet and outlet - Pond retaining wall on village side 100mX1.5m - 400acre laser leveling - 100acre gypsum application
20	Toran	50	49	326488	<ul style="list-style-type: none"> - 200mX1.5m retaining wall of village pond, digging, renovation - 400m pipeline 10" dia from pond to fields on two sides - laser leveling 100acre

21	Jelbhera	67	65	437493	<ul style="list-style-type: none"> - Renovation, de-siltation + Ghat for pond near school - 500m U/G pipeline 10" dia for irrigation - Pond near Hari Singh Chaki to be joined with school pond by channel 50mX0.6X0.45m
22	Faridpur	96	93	626856	<ul style="list-style-type: none"> - Joining of three ponds by UG pipeline and from main pond to drain pipeline total length 1200mX0.25m dia - MNREGA funds to be used
23	Julkan	154	150	1005582	<ul style="list-style-type: none"> - Excess water of pond near Govt.School to be drained in Ghaggar through 1500mX0.25m pipeline same channel to be used for lifting water from Ghaggar for irrigation to paddy. MNREGA funds to be used.
24	Akbarpur	64	62	417904	<ul style="list-style-type: none"> - Village pond up to drain open lined channel 420mX0.6X0.45m - 500m UG pipeline 0.25m dia for irrigation in Shamlat land - One set ground water recharge
25	Hasanpur	69	67	450553	<ul style="list-style-type: none"> - One culvert on road near minor to ease flow 12'X4'X4' + parapet - Two 12m RCC pipe drops 0.30m dia + check wall at end - Laser leveling 70acres
26	AlipurSikhan	65	63	424434	<ul style="list-style-type: none"> - From pond on western side of village UG pipeline 600mX0.25m dia along the link road up to common water course of minor - renovation of pond and strengthening pf embankments
27	Bhambuan	82	80	535440	<ul style="list-style-type: none"> - Near Julkan crossing, Gaurian Basti pond retaining wall 40mX1.5m - Joining of two ponds with 0.30mX15m pipeline - From second pond along the road pipeline upto khand than to siphon and then along minor to Ghaggar
28	Kapoori	54	52	352607	<ul style="list-style-type: none"> - The point where nalas join near Ghaggar ghat from pulley to 450mX0.30m end of Tehal Singh field 0.3mX300m pipeline + RW at the end + apron
29	Mehon	220	214	1436545	<ul style="list-style-type: none"> - Disposal of pond water into Ghaggar along link road Bhangra to Shekhpur road 2700m inlet and outlet in Ghaggar and water to be used for irrigation lift system - 50m retaining wall 1.5m high - 300acre laser leveling + MNREGA labor
30	Arnauli	82	80	535440	<ul style="list-style-type: none"> - Village pond – RCC pipe 0.3mX600m along the road upto minor + further upto Ghaggar + drop + inlet along Harbans Singh Sarpanch fields + MNREGA labor - 50m Retaining wall 1m ht
31	Shadipur	150	146	979463	<ul style="list-style-type: none"> - 700mX0.30m pipeline from main street (eastern side) along Bhunerheri road upto Miranpur drain + from Dera Subash Singh to main road

					300mX0.30m+ main road to 500mX0.45m pipeline put to Miranpur drain + valve at end to close pipeline
32	Noorpur	60	58	391785	100acre laser leveling, two units of ground water recharge
33	Bhangran	102	99	666035	- Pond desiltation (back of Jarnail Singh house) and 100m retaining wall 1m ht - U/G pipeline from pond to Shamlat land 500m, 0.25m dia + Engine for lifting - Lalawala Pir to pond pacca channel 200m, 0.60mX0.45m. Dharamsala to pond – pacca channel 60mX0.45mx045m
34	KheriRaju Singh	117	114	763981	- Disposal of excess rainwater from pond to Ghaggar river 300mX0.30m pipe dia - Lifting water from Ghaggar 400m pipeline, 0.30m dia for community use - Laser leveling 200acre
35	Bhashmara	130	126	848868	- Disposal of excess rainwater by joining with main nala and putting in Ghaggar – 360mX0.25m pipeline from chowk near Sarpanch house to along Devigarh road upto Karam Chand house 100m pipeline + 100 = 200m pipeline + Haudi 0.30m dia + 80acre laser leveling
36	Jellahheri	156	152	1018641	- Lifting water from Ghaggar river for irrigation to Shamlat land 2000m pipeline 0.30m dia on dead grade with pump stand pipe to be used for flood water disposal to Ghaggar as well.
37	Rajgarh-- Bhunerheri	72	70	470142	- 1600m u/g pipe line 30cm dia from pond to nala along the main road - Laser leveling150 acre
38	Kishanpur- Bhunerheri	98	95	639916	- 50m retaining wall of pond 1,5m high
39	Pur	182	177	1188415	- U/G pipeline Shamlat land irrigation 1000m + engine Haudi to link two T.wells - 2 pacca chutes to drop water into Ghaggar - 120acre laser leveling
	TOTAL		4050	27216000	

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29	Mehon	220	214	1436545	<p>Disposal of pond water into Ghaggar along link road Bhangra to Shekhpur road 2700m inlet and outlet in Ghaggar and water to be used for irrigation lift system</p> <ul style="list-style-type: none"> - 50m retaining wall 1.5m high - 300acre laser leveling + MNREGA labor
30	Arnauli	82	80	535440	<p>village pond – RCC pipe 0.3mX600m along the road upto minor + further upto Ghaggar + drop + inlet along Harbans Singh Sarpanch fields + MNREGA labor</p> <ul style="list-style-type: none"> - 50m Retaining wall 1m ht

31	Shadipur	150	146	979463	700mX0.30m pipeline from main street (eastern side) along Bhunerheri road upto Miranpur drain + from Dera Subash Singh to main road 300mX0.30m+ main road to 500mX0.45m pipeline put to Miranpur drain + valve at end to close pipeline
32	Noorpur	60	58	391785	100acre laser leveling, two units of ground water recharge
33	Bhangran	102	99	666035	<ul style="list-style-type: none"> - Pond desiltation (back of Jarnail Singh house) and 100m retaining wall 1m ht - U/G pipeline from pond to Shamlat land 500m, 0.25m dia + Engine for lifting - Lalawala Pir to pond pacca channel 200m, 0.60mX0.45m. Dharamsala to pond – pacca channel 60mX0.45mx045m
34	KheriRaju Singh	117	114	763981	<ul style="list-style-type: none"> - Disposal of excess rainwater from pond to Ghaggar river 300mX0.30m pipe dia - Lifting water from Ghaggar 400m pipeline, 0.30m dia for community use - Laser leveling 200acre
35	Bhashmar a	130	126	848868	<ul style="list-style-type: none"> - Disposal of excess rainwater by joining with main nala and putting in Ghaggar – 360mX0.25m pipeline from chowk near Sarpanch house to along Devigarh road upto Karam Chand house 100m pipeline + 100 = 200m pipeline + Haudi 0.30m dia + 80acre laser leveling
36	Jellahheri	156	152	1018641	<ul style="list-style-type: none"> - Lifting water from Ghaggar river for irrigation to Shamlat land 2000m pipeline 0.30m dia on dead grade with pump stand pipe to be used for flood water disposal to Ghaggar as well.
37	Rajgarh-- Bhunerheri	72	70	470142	<ul style="list-style-type: none"> - 1600m u/g pipe line 30cm dia from pond to nala along the main road - Laser leveling 150 acre - 50m retaining wall of pond 1,5m high
38	Kishanpur - Bhunerheri	98	95	639916	
39	Pur	182	177	1188415	<ul style="list-style-type: none"> - U/G pipeline Shamlat land irrigation 1000m + engine Haudi to link two T.wells - 2 pacca chutes to drop water into Ghaggar - 120acre laser leveling
	TOTAL		4050	2721600	0