



WATER-RIGHT DOCKET

Yellowstone National Park

Docket No: 6

OUTLYING STATIONS WATER SYSTEMS

Other Supporting Information

00-00-0000: narrative report for work order 101-211750, contract no. 14-10-0243-660

NARRATIVE REPORT

Work Order 101-211750

Contract Number 14-10-0243-660

Water, Sewer, and Power Extensions, West Entrance.

Description: This project covered the installation of three systems: Water, Sewer and Electrical, and was required to be frost proof and allow for year round operations.

Water System: The source of supply was already in existence, consisting of a well and pump installation, an 80,000 gallon below-ground concrete reservoir, and a pressure tank and chlorinator installed in a pump house building. These assets are situated in the area of the Park occupied by the Hamilton Stores Headquarters. There is also a fire booster pump system triggered from the pressure tank; when main pressure falls below a preset level the fire booster switches on. Connection to existing supply was made from the nearest water valve chamber to the National Park Service area (pt. "A"), supplied by a 6" C.I. pipe main and 6" gate valve direct from the pump house.

The distribution system is by 8" and 6" asbestos cement class 150 pipe supplying a 2" galvanized steel loop to the 12 trailer sites.

A future apartment building and residences are planned for an adjoining area which is also supplied by the new utility service. All roads and trailer pads had already been paved under a previous contract.

Frost proof construction was allowed for by keeping all trenches a minimum of 5 feet deep. Since the site is extremely flat there is little or no gradient in the water lines. Fire fighting capability is provided by nine 6" Fire Hydrants while four 8", five 6" and six 2" gate valves control distribution of water and give access for future connections. The 12 trailer pads have a 1" riser service and 1" gate valve installed in the Utility Box at each pad. The trailer pads have a built-in shut-off water service installed below the frost line.

Sewer System: Similarly, the trailer pads and future residential area are provided with a complete sewer and sewage disposal system on the site; this consists of 6" vitrified clay sewer lines, concrete manholes, drop manhole and sewage ejector station, which conveys raw sewage through a 4" force main to a 10,000 gallons reinforced concrete, below ground, septic tank, the effluent draining by gravity through a distribution box to 1,300 lin. feet of open-jointed clay tile in the distribution field.

Sewer connections to the 12 trailer pads are provided by individual sewer utility blocks.

Electrical System: This consists of an overhead power line and transformer on pole erected by the Fall River Rural Electric Co-operative Inc. It is carried from the West Yellowstone townsite on the telephone poles along the west boundary of the Park, by agreement with the Bell Telephone Company. It continues overhead to the two service poles "A" and "B" at the West Entrance to the trailer sites. Pole "A" serving the Ejector lift station and Pole "B" the 12 trailer pads, both by direct burial cable. A power utility block is installed at each trailer pad, complete with outlet box and female outlets to which the special male plugs provided for in Item 4 of Change Order No. 2, can be fitted. The overhead line transmission is at 7,200 volts stepping down to 220 volts at the transformer; supply is at single phase. The direct burial cable is carried under the two road crossings by 2" diam. coated steel conduits each 30 feet long and otherwise is protected by 8" X 1" warning boards in a trench 18" deep adjacent to the 2" steel water line. A panel board near pad #12 describes the two circuits each serving six pads in the campground Trailer Court.

Conclusion: Provision was made in the specifications for the work of replacing and making good cuts in the existing bituminous road surfacing (during the progress of the pipe laying, etc.) to be carried out by the Contracting Officer; the Contractor's responsibility being confined to making good the trench or other disturbed surface, up to the finished grade of the road.

Part of this work has been completed but that in the trailer area and approaches to it has still to be done. This refers to the roads and the trailer pads which have been re-staked to facilitate the rehabilitation work.

Connections to existing water supplies were three in number:

- (I) To existing 6" piped water supply in valve chambers at Hamilton Stores Headquarters Area, Pt. "A".
- (II) To existing 3" water main in old pump house, Pt. "Q".
- (III) To existing 2½" water main at the Entrance Plaza, Pt. "S".

This is contained in the new concrete valve chamber built at the Southeast corner of the District Ranger's Office.

Well capacities at the points of supply are approximately:

(I)	Pt. "A"	155 g.p.m.
(II)	Pt. "Q"	15 g.p.m.
(III)	Pt. "g"	45 g.p.m.
	Total	215 g.p.m.

It is now possible therefore, by operating the various points of supply to supplement supply where a quick demand has to be met, for instance as in fire fighting. Also flexibility can be maintained without interference with essential services when shutdown is needed for maintenance or replacement purposes.

Survey and Drawings: Survey work was carried out by D&C, SSC as were the working drawings. Montazana Engineers staked the top portion of the sewer in the fall of 1965, in the absence of student crewman.

Contract Award: Bids were opened at Yellowstone National Park Headquarters on August 19, 1965 and Contract No. 14-10-0243-660 was awarded to the low bidder, Morell Construction Company, P. O. Box G, West Yellowstone, Montana on August 31, 1965.

Project Activity: Notice to proceed was issued September 16, 1965 and contract time began on the following day. By the end of September, general tree cutting was well advanced. The Distribution Field had been satisfactorily laid and all main sewer lines placed with the exception of the trailer area sewers.

The first week in October saw the start of the sewer testing operations and laying of the 8" water line began from the point of supply "A" adjacent to the Hamilton Stores area. The septic tank was excavated and form work erected, and the 6" water lines excavation and laying made good progress. By the end of the month the floor and walls of the septic tank had been poured.

Early in November the trailer area sewer lines were completed and manholes installed. Sewer, 8" and 6" water line testing were then satisfactorily carried out, all sewer lines having been laid by November 4. Back-filling, however, was only partially finished but all pipes were covered for the winter months. Final water pipe laying of 2" steel distribution mains in the trailer area were completed by November 9. The roof of the septic tank was completed between November 10 and 12.

A stop order was issued November 12, 1965 by which time 61 per cent completion had been recorded.

Resumption - 1966: Work was resumed under Resume Work Order, effective June 20, 1966. The rest of the month was utilized to complete the installation of water services and sewer connections to the 12 trailer pads, including concrete utility blocks installation. Also, excavation to grade for Ejector Station and Drop manhole was completed and reinforced concrete foundations laid by June 23.

The Ejector Station and Drop manhole were lowered into position by July 1, without mishap. The 4" C.I.P. force sewage main was laid and connected; back-filling to Ejector Station and Drop manhole and final connections to sewers completed by July 8.

It was anticipated that the Power company, (Fall River Rural Electric Coop. Inc.) would complete the installation of power line by July 15, but a right-of-way dispute involving the Bell Telephone Company line delayed the start of the work until August 3, and actual installation of power was only completed by August 12.

Change Order No. 2 had been delayed for the same reason and the reinforced concrete valve chamber at the Ranger's Office was completed by August 23.

Final connections of the new water system to existing supplies were as follows: (a) to old pump house on July 15 and (b) to District Ranger's Office, well and pump supply on August 12, 1966. Disinfection of contract supply reticulation was completed by July 20, and Bacteriological Water analysis results dated July 21, proved satisfactory.

Final cleaning up and removal of debris was started July 26 and a pre-final inspection carried out by August 1.

The septic tank finally passed the water test on August 4, and tree painting of scarred trees ended August 29, postdating the completion date by three days.

The Ejector Station was inspected by the manufacturer's representative and certain minor repairs and adjustments carried out under warranty and the equipment tested satisfactorily on August 24.

The Final Inspection was carried out on August 26, 1966.

Finally, repairs and replacements under guarantee were made to certain water valves and fittings by the Contractor, September 17, 1966.

Aggregates and all ready-mix concrete was supplied by the Contractor, Morell Construction Company, West Yellowstone, who operates their own ready-mix concrete business in the vicinity.

Subcontractors: The clearing and grubbing including part of the pipe trench digging and back-filling was carried out by the Subcontractor, Joe Wilson, Contractor, West Yellowstone, Montana.

The duplex pneumatic Ejector Station was supplied by the manufacturers, the Fox-Vit Manufacturing Co., Mineral Wells, Texas, through the Water Works Equipment Co. of Salt Lake City, Utah, whose technical representative is Mr. Grant Back, a resident of Pocatello, Idaho.

Change Orders: Change Order No. 1 provided an additional 1" dia. Gate Valve to each of 12 trailer pads in the trailer area. Change Order No. 2 concerned four items of improvements: Item 1, provided a reinforced concrete valve chamber to give convenient access to the three valves which control the connection of the existing well supply at the District Ranger's Office. Item 2, similarly, this connection to the old pump house well supply gives an alternative source of excellent water. Item 3, put into effect the relocation of service pole "B" which resulted in an improvement originally not envisaged. Item 4, provided an electrical adaptor of versatile type for each trailer pad electric service.

Overruns - Underruns: Substantial underruns were recorded in the items for 8" and 6" water lines and 1" service lines and in the sewer lines. There were overruns in the electrical system due to the changes made but the net result revealed savings of \$2,923.29 on the contract (44%) plus the costs of change orders (\$2,311.95) giving virtual savings of \$5,595.13 (8.6%).

The underruns resulted from shorter pipe lines being found possible on the site than was originally anticipated.

Summary: The project was completed in a satisfactory manner and within the completion date of November 9, 1966. The delay in installing the power line put back installation of the electrical connection by nearly a month and also delayed the submission of cost estimates for Change Order No. 2. Otherwise a completion date at the end of July would have been possible.

There were no injuries or losses of working time due to accident or from any other cause during the time of the contract.

Form 10-174
(June 1962)UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FACE SHEET FOR COMPLETION REPORT

Park Yellowstone National Park	Region Midwest	Work Order No. B-100
Location in Park Mammoth	State(s) Wyoming	Fund Symbol 14X1035
☒ Contract and/or ☒ Day Labor	County or Counties	Year Programmed 1964
Work Order Title Utility Extensions to Residences		PCP No. U-231
		Master Plan No. NP-Yell-3705
		Master Plan Corrected By
		As Built Drawings By
		Date Started July 22, 1963
		Date Completed November 8, 1963
DESCRIPTION OF FIXED ASSETS (For completion by employee in charge of project)		TOTAL COSTS (For completion by FFO)
100.8 Utilities		22,029.61
100.8-1 Water Systems		
5,392.65	862.83(16%)	6,255.48
100.8-2 Sewer Systems		
1,917.50	306.80(16%)	2,224.30
100.8-5 Electric Systems		
11,680.89	1,868.94(16%)	13,549.83
Contract 14-10-0243-524 Joe Wasson, Western Plumbing and Heating		
AA-3-3-153 6/26/63 18,020.50 AA-3-4-11 8/5/63 1,727.20 AA-3-4-23 8/22/63 280.69 AA-3-4-42 10/2/63 571.00 AA-3-4-104 4/24/64 Ra 1,600.00 AA-3-4-108 5/20/64 Ra 8.35 Total 18,991.04		
TOTAL		\$ 22,029.61

DISTRIBUTION		THE FIXED ASSET DESCRIBED ABOVE HAS BEEN COMPLETED IN ACCORDANCE WITH APPROVED DRAWINGS, SPECIFICATIONS, AND AUTHORIZED CHANGES	
No.	To		
1	WASO	Submitted	
1	Midwest Reg	By: <i>Herald A. Fene</i>	Title: Park Engineer Date: 6-16-64
1	WODC	Approved	
1	Engineers	By: <i>John D. McJannet</i>	Title: Superintendent Date: 6-16-64
1	Accounts	COSTS VERIFIED	
		BY: <i>Kitt H. Williams</i>	Title: Accounting Officer Date: 6-16-64

CRA:ueh

UNITED STATES
DEPARTMENT OF INTERIOR
NATIONAL PARK SERVICE

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YELLOWSTONE NATIONAL PARK, WYOMING
83020

ESTIMATE Final DATE November 7, 1963
CONTRACT NO. 14-10-0243-524 CONTRACTOR Western Plumbing and Heating
CONSTRUCTION OF Water, Sewer, and Electrical Extensions at Mammoth Residential Area
CONTRACT TIME EXPIRES December 18, 1963

ORIGINAL CONTRACT \$17,280.50
Change Order No. 1 1,727.20
Change Order No. 2 280.69
Total 19,288.39

Work Order No. _____
Working Drawing No. NP-YEL 3949 PCP No. 7-831

WATER SYSTEM

Item No.	Quantity	Description	Amount	% Complete	Amount
1.	500	Lin. Ft., 4" cement lined, Class 150, (Type II) C.I. Pipe, installed at	\$ 6.05	<u>500 ft.</u>	<u>\$1,085.00</u>
2.	300	Lin. Ft., 1" Galv. steel pipe, installed at	4.67	<u>300</u>	<u>1,401.00</u>
3.	2	Each, 4" valve & C.I. valve box, installed at	202.00	<u>2 ea.</u>	<u>404.00</u>
4.		Force Account Work - Contingent Sum	800.00		<u>0-</u>
TOTAL COST WATER SYSTEM			5,730.00		<u>4,890.00</u>

SEWER SYSTEM

1.	275	Lin. ft., 4" dia. cast iron soil pipe, installed at	4.90	<u>275</u>	<u>1,347.50</u>
2.	10	Each, cast iron cleanouts	22.00	<u>10</u>	<u>220.00</u>
3.	1	Each, standard manhole, complete, in place at	350.00	<u>1</u>	<u>350.00</u>

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Form 10-174
(June 1962)UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FACE SHEET FOR COMPLETION REPORT

Park Yellowstone National Park	Region Midwest
Location in Park Norris Area	State(s) Wyoming
County or Counties	
☒ Contract and/or ☒ Day Labor	

Work Order Title

Construction of Water and Sewer System,
Norris Campground

Work Order No.

B-74-Yell (332.59)

Fund Symbol

14X1035

Year Programmed

1962

POP No.

U-218-1

Master Plan No.

3818

Master Plan Corrected By

D. Bottles

As Built Drawings By

D. Bottles

Date Started

July 22, 1963

Date Completed

October 15, 1963DESCRIPTION OF FIXED ASSETS
(For completion by employee in charge of project)

	Cost	PS&S	
100.8 Utilities - Electric System	\$1,886.00	\$ 301.76	2,187.76
100.8 Utilities - Sewer System	14,331.97	2,293.12	16,625.09
100.8 Utilities - Water System	102,141.62	16,342.65	118,484.27
	\$118,359.59	\$18,937.53	

Contract 14-10-0243-470, Bateman Excavating Co.

Water \$15,971.25; Sewer System \$14,124.75

Contract 14-10-0243-523 Nelson Bros. Constr. Co.

Water \$84,280.37

Contract 14-10-0243-479 Cambell Constr. Co.

Water \$1,890.00 Electricity \$1,886.00

Day Labor \$207.22 for Supplies & Materials, Sewer System

Total of above \$118,359.59

AA-3-1973	6/29/62	29,321.00	AA-3-3-148	6/20/63	300.00
AA-3-6	7/20/62	2,130.00	AA-3-3-72	12/2/63	Re 300.00
AA-3-3-63	11/6/62	1,046.00	AA-3-3-153	6/26/63	81,819.50
AA-3-3-68	11/13/62	775.00	AA-3-4-42	10/2/63	2,284.00
AA-3-3-103	2/20/63	207.22	AA-3-4-65	11/15/63	256.87
Total			\$118,359.59		

137,297.12

DISTRIBUTION	THE FIXED ASSET COSTS LISTED ABOVE HAVE BEEN PREPARED BY THE PROJECT ENGINEER AND A CHECKED BY THE PROJECT ENGINEER.	
Not To		
Director	Submitted	Date
WDC	By	Park Engineer 2/3/64
Reg. Dir.	Approved	Date
Engineer	By	Superintendent 2/3/64
Finance	By	Accounting Officer 2/3/64

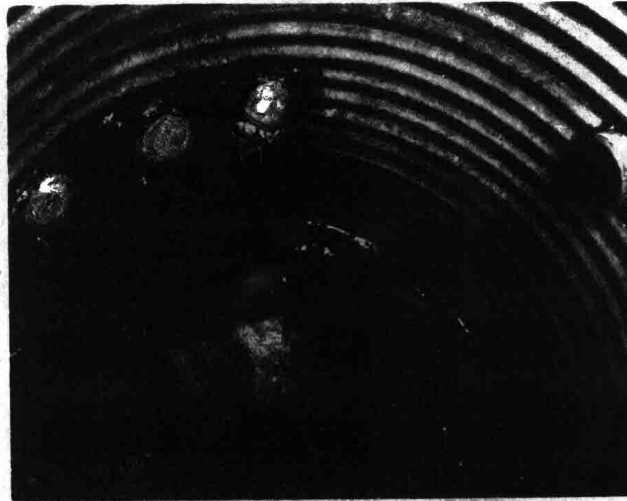
EEG:neh

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE		Work Order No. b-90-YEL(333.43)
FACE SHEET FOR COMPLETION REPORT		Job Symbol 1A11033
Park Yellowstone National Park	Region Midwest	Year Programmed 1962
Location in Park Pebble Creek Campground	State(s) Wyoming	PCP No. U-217
	County or Counties	Master Plan No. NY-YEL-3938
☐ Contract and/or ☒ Day Labor		Master Plan Corrected By
Work Order Title Water Supply		As Built Drawings By
		Date Started October 1963
		Date Completed November 1963
DESCRIPTION OF FIXED ASSETS (For completion by employee in charge of project)		TOTAL COSTS (For completion by FFD)
100.8 Water System (Chlorinated)		7,980.34
AA-3-3-46 10/5/62 \$7,500.00 AA-3-4-72 12/2/63 Re 620.40 \$6,879.60		
TOTAL		\$ 7,980.34
THE FIXED ASSET DESCRIBED ABOVE HAS BEEN COMPLETED IN ACCORDANCE WITH APPROVED DRAWINGS, SPECIFICATIONS, AND AUTHORIZED CHANGES		
DISTRIBUTION		
No. To		
Director	Submitted By: <i>Samuel A. Jones</i>	Title: Park Engineer Date: 1-8-64
WDC	Approved By: <i>Samuel A. Jones</i>	Title: Superintendent Date: 1-8-64
Reg. Dir.		
Engr.		
Finance		
	COSTS VERIFIED BY: <i>EEG</i>	Title: Accounting Officer Date: 1-8-64
EEG:neh		

Completion Report Narrative
Account B-90-YEL (333.43)

The purpose of this project was the construction of a water system to service the Pebble Creek campground.

Work on the project was begun in October 1962, with the construction of the intake structure on the small tributary of Pebble Creek above the campground. This structure includes approximately 60 feet of perforated six inch CMP, a rubble masonry check dam and a 48" CMP collecting basin. The three perforated CMP collection lines were covered with approximately two feet of $1\frac{1}{2}$ " to $5/8$ " gravel. The collecting basin was fabricated from a section of 48 inch CMP and contains 3 - 3 inch intakes, a two inch overflow and a two inch outlet. The basin is covered with a galvanized metal locked lid.



Interior View of Collecting Basin

NARRATIVE REPORT
B-74, 332.59
Construct Utilities, Norris Campground

Authorization: PCF U-218-1, Campground Utilities, Norris Area

The first portion of this project was accomplished by Bateman Brothers Excavating Company of Shelley, Idaho under Contract No. 14-10-0243-470 (awarded June 28, 1962) under which \$15,214.00 was set up for water system and \$14,107 for sewer system. Bateman was low of five bidders on this project which also included construction of campground roads. Contract amount was \$49,701.14. Overruns totaling \$775.00 brought the costs to the following:

Water System	\$15,971.25
Sewer System	<u>14,124.75</u>
Total	\$30,096.00

Notice to proceed was issued July 9, 1962, with beginning date of contract July 23, 1962 and expiration date December 19, 1962. Change Order 1 issued October 9, 1962 did not involve utilities. A final inspection was held October 15, 1963, with acceptance recommended subject to burning of slash. A Stop Order issued October 15, 1962 was effective at close of business October 16 due to weather conditions not suitable for burning slash. A resume work order dated November 6, 1962 was effective the 7th, making the new expiration date January 19, 1963. Acting Project Supervisor Fairchild's memorandum of November 13, 1962 reported that all slash, stumps, etc. had been burned at the Norris borrow pit, which was then in acceptable condition. He recommended acceptance as of November 9, 1962, with completion date to be recorded as November 9, 1962.

Water and sewer hookups to four comfort stations and the ranger station were covered by a purchase order to Batemen Brothers Excavating Company in the amount of \$207.22 (Day Labor funds), as the hookups were not included in the contract.

PLANS, SURVEYS AND SUPERVISION: Construction Drawing No. NP-YEL-3917 (9 sheets), Campground Utilities, Norris Campground, was prepared in the Western Office of Design and Construction at San Francisco, California. This set of drawings covered the construction of a water and sewer system. Preliminary surveys, construction surveys, and contract supervision were performed by Western Office of Design and Construction personnel. Contract administration was performed by Park personnel.

WORK ACCOMPLISHED: To expedite campground use, the water distribution system was constructed in advance of water supply system. Scheduled in this order, finished campground utilities were protected from paving contract activities. The system was pressure tested at the time of completion and is now tied in with remainder of six inch supply line constructed this year.

Form 10-174
(June 1962)UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FACE SHEET FOR COMPLETION REPORT

Park Yellowstone National Park		Region Midwest	Work Order No. B-61-Yel - (332.53)																					
Location in Park Park General		State(s)	Fund Symbol 14X1035																					
☐ Contract and/or ☒ Day Labor		County or Counties	Year Programmed 1962																					
Work Order Title Power and Water Systems, Outlying Stations		Master Plan No. U-221	PCP No.																					
DESCRIPTION OF FIXED ASSETS (For completion by employee in charge of project)		Master Plan Corrected By	As Built Drawings By																					
<table border="0"> <tr> <td>100.6 Buildings</td> <td>1,160.43</td> </tr> <tr> <td>100.8 Utilities - Water</td> <td>10,886.48</td> </tr> <tr> <td>100.8 Utilities - Sewer</td> <td>2,099.72</td> </tr> <tr> <td>100.8 Utilities - Electricity</td> <td>16,738.77</td> </tr> <tr> <td>100.8 Utilities - LP Gas</td> <td>5,463.52</td> </tr> <tr> <td></td> <td><u>36,348.92</u></td> </tr> <tr> <td>Total Work - Day Labor</td> <td></td> </tr> </table>		100.6 Buildings	1,160.43	100.8 Utilities - Water	10,886.48	100.8 Utilities - Sewer	2,099.72	100.8 Utilities - Electricity	16,738.77	100.8 Utilities - LP Gas	5,463.52		<u>36,348.92</u>	Total Work - Day Labor		Date Started 8/24/61	Date Completed 10/29/62							
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TOTAL COSTS (For completion by FFO)																								
<table border="0"> <tr> <td>AA-3-1757</td> <td>9/1/61</td> <td>\$33,200.00</td> </tr> <tr> <td>AA-3-1960</td> <td>6/19/62</td> <td>Re 8,000.00</td> </tr> <tr> <td>AA-3-2</td> <td>7/17/62</td> <td>8,000.00</td> </tr> <tr> <td>AA-3-Rev</td> <td>10/5/62</td> <td>Re 1,800.00</td> </tr> <tr> <td>AA-3-3-90</td> <td>1/22/63</td> <td>Re 64.72</td> </tr> <tr> <td>Total</td> <td></td> <td>\$31,335.28</td> </tr> </table>		AA-3-1757	9/1/61	\$33,200.00	AA-3-1960	6/19/62	Re 8,000.00	AA-3-2	7/17/62	8,000.00	AA-3-Rev	10/5/62	Re 1,800.00	AA-3-3-90	1/22/63	Re 64.72	Total		\$31,335.28	<table border="0"> <tr> <td>TOTAL</td> <td>\$</td> <td>36,348.92</td> </tr> </table>		TOTAL	\$	36,348.92
AA-3-1757	9/1/61	\$33,200.00																						
AA-3-1960	6/19/62	Re 8,000.00																						
AA-3-2	7/17/62	8,000.00																						
AA-3-Rev	10/5/62	Re 1,800.00																						
AA-3-3-90	1/22/63	Re 64.72																						
Total		\$31,335.28																						
TOTAL	\$	36,348.92																						

DISTRIBUTION		THE FIXED ASSET DESCRIBED ABOVE HAS BEEN COMPLETED IN ACCORDANCE WITH APPROVED DRAWINGS, SPECIFICATIONS, AND AUTHORIZED CHANGES	
No.	To	Submitted	Title: Date:
1	Director	<i>Donald A. Fone</i>	Park Engineer 6-21-63
1	Reg. Dir. Midwest	<i>Donald A. Fone</i>	2-22-63
1	WODC	Approved	Title: Date:
1	Finance	By: <i>Donald A. Fone</i>	Superintendent 6-21-63
1	Park Engr.	By: <i>Donald A. Fone</i>	2-22-63
COSTS VERIFIED		Title: Date:	
BY: <i>Donald A. Fone</i>		Accounting Officer 6-21-63	2-22-63

BEC:mas

11/60

6. Old Faithful - A new electric service was run to building 164. Connection was made with 50' of triplex cable at a cost of \$140.68. New electric service was provided to building 163. Approximately 150' of triplex cable was used in this connection and incurred a cost of \$214.46. Six hundred feet of triplex cable and accessories were used to provide electric service to building 178. Total cost of this installation was \$257.35. Installation and purchases of 1-100 amp safety switch w/ fuses; and 1500 feet of #2 underground cable provided electrical service to building 161 at a total cost of \$837.28. All work in the Old Faithful area was completed by May 23, 1962.
7. Norris - A 6" cased well was drilled in the Norris campground by Andrew Well Drilling Contractors in the fall of 1961. Installation of a water system was abandoned due to the high temperature of the water obtained. Expenditures for this abandoned project totaled \$1,830.00.
8. Lake - Improved electrical service was provided to the Lake Ranger Station with the installation of 450' of electrical cable, 3-35' poles, and accessoried. This work was completed at a cost of \$981.16 on August 16, 1962.
9. Fishing Bridge - Electrical service to the Naturalist's quarters was replaced with 300' of electrical cable, 30' of conduit, and 1-12 circuit panel (w/breakers). Total cost was \$352.37 and work was completed on August 11, 1962.
10. West Thumb - A total of 600' of underground cable was installed to provide electrical service to the Ranger Station. Total cost for materials and installation was \$762.86. A new connection between the building and an existing sewer system was made at a cost of \$210.38. All work in the area was completed by October, 1962.
11. Bechler - The existing gravity water system was replaced with the drilling of a well and the installation of a pressure system. The 6" cased well, 135' deep, was drilled by the Andrew Well Drilling Contractors at a cost of \$2,495.00. The pressure system consists of 100' of 1" pipe, 100' of 1½" pipe, 220 gallon galvanized pressure tank, and 1 "Jet" pump. Total cost of the water system was \$3,412.44.
A new electrical system was installed to replace the existing inadequate system. The new system includes 500' of electrical wiring, 300' of underground cable, switches, etc. An "Armco" steel building constructed to house the generator at a cost of \$1,289.72. Total cost of the new electrical system including the generator house was \$4,261.35. All work on this portion of the project was completed on August 30, 1962.

Form 10-174
(Rev. 8-56)NITEL STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

COMPLETION REPORT OF CONSTRUCTION PROJECT

REGION Two	AREA Yellowstone National Park	COUNTY	STATE Wyoming
PROJECT OR JOB TITLE Drilling and Testing of Water Wells		PCP NO. None	
LOCATION IN AREA West Thumb		MASTER PLAN NO. None	BUILDING NO.
WORKING DRAWING NO. AND TITLE None			
APPROPRIATION TITLE AND SYMBOL 14*1035 Construction NPS		WORK ORDER NO. 120.2 WASO	
CONTRACT NO. 14-10-243-386		DATE WORK STARTED June 11, 1959	DATE WORK COMPLETED August 28, 1959
NAME OF CONTRACTOR Van Dyken Drilling Co.		ADDRESS 403 West Villard, Bozeman, Montana	

COST ANALYSIS

CONSTRUCTION ITEMS	QTY	UNIT COST IN PLACE	TOTAL COST IN PLACE
Note: See Attached Final Estimate			\$8,731.00
Fiscal Clearance			
		TOTAL	\$8,731.00

SUMMARY OF EXPENDITURES

PERSONAL SERVICES	EQUIPMENT	MATERIALS AND SUPPLIES
OTHER		

CHANGE ORDERS

ORIGINAL CONTRACT AMOUNT	FIRST	SECOND	THIRD
\$2,529.50			
FINAL CONTRACT AMOUNT	FOURTH	FIFTH	SIXTH
\$8,731.00			

THIS PROJECT OR JOB HAS BEEN COMPLETED IN ACCORDANCE WITH
APPROVED DRAWINGS, SPECIFICATIONS, AUTHORIZED CHANGES

SUBMITTED BY (Name and title) Theodore J. Wirth Project Supervisor	DATE
APPROVED BY (Name and title) Lemuel A. Garrison, Superintendent	DATE 2-15-61

(ATTACH NARRATIVE STATEMENT, PHOTOGRAPHS, AND "AS BUILT" DRAWINGS TO THIS FORM)

NARRATIVE STATEMENT

Description

This project provides for Drilling and Testing of Water Wells for the Development Near West Thumb, Yellowstone National Park.

Work Accomplished

The work accomplished under Account No. 12⁰⁰.2 WASO of this contract is as follows:

The contractor drilled six holes according to the specifications; Well No. 1 was drilled about 120 feet, some water was found but the temperature was 120°F. It was also determined that the deeper the well the higher the temperature of the water. This well was abandoned. Well No. 2, located near the Yellowstone Lake Shore produced some water at about 93°F. This well was also abandoned. Well No. 3, produced about 35 g.p.m. at 100 feet deep. The water temperature was 91°F. It was decided to case this well and retain it for future possible use.

During these operations it was found necessary to issue Change Order No. 1 which revised the Contract Bid Schedule and increased the contract period by 90 calendar days making August 30, 1960, as the completion date.

Wells No. 4 and No. 5 were unproductive and so abandoned. Well No. 6 produced water at about 90 ft. but drilling was continued to 120 feet for investigation. The final production was about 20 g.p.m. with the water at 113°F. This well was cased and left for future possible use.

The USGS was asked to make a study of the area and make recommendations as to well-sites for drilling and other tests. Mr. Ellis Gordon represented the USGS from Cheyenne, Wyoming. Mr. Gordon will submit a detailed report on his findings later.

For further data to complete their report the USGS brought in a test drill that would auger holes to about 100 feet deep. They drilled about 1000 feet of test holes in the area to supplement the test drilling under this contract.

* Mr. Gordon's final report on the ground water in this area will be in much more detail since his men inspected the drilling and obtained a geological log of each drilled hole.

*** Report received. (Negative, in that it recommends direct diversion from Lake Yellowstone) See Dwg NP-WML/3710B.**

Docket Information

Number of Documents in Docket 15

Documents Dated from 2/15/1961 to 6/16/1964

Docket Compiled: 7/29/2011