RECLAMATION

Managing Water in the West

MP CONSTRUCTION OFFICE

Willows, California

Construction Progress Report – L29

Drought Relief–Construction of New Wells
The contractor disconnecting the string of columns, tubes, and shafts after test pumping new well.

July 2012

"Doing It Right from the Start"

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

CONSTRUCTION PROGRESS REPORT (L-29)
MP CONSTRUCTION OFFICE
MID-PACIFIC REGION
June 2012

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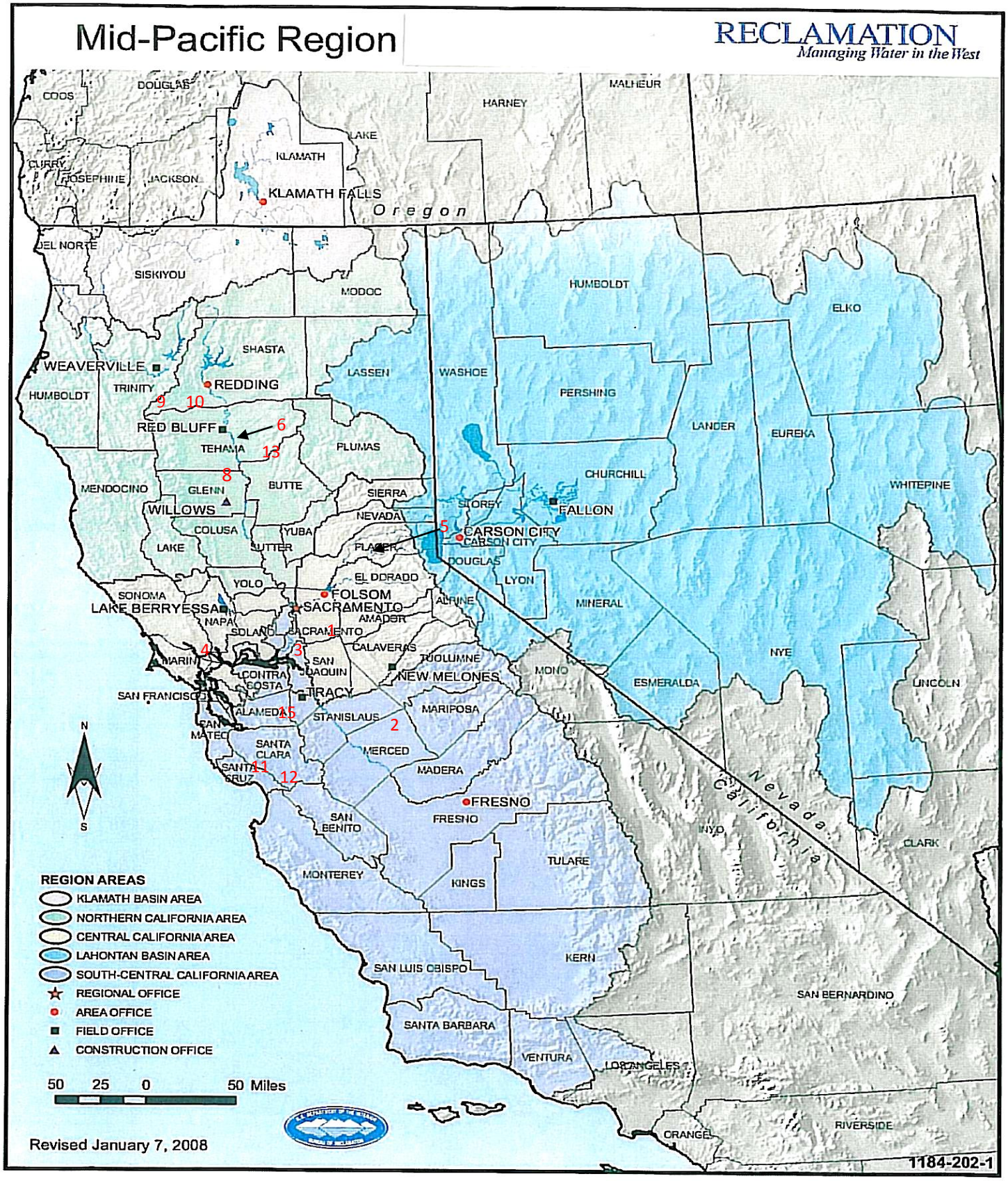

Mid-Pacific Region
RECLAMATION
Managing Water in the West
COOS
DOUGLAS
HARNEY
MALHEUR
LAKE
KLAMATH
CURRY
JOSEPHINE
JACKSON
KLAMATH FALLS
Oregon
DEL NORTE
SISKIYOU
MODOC
HUMBOLDT
ELKO
SHASTA
WEAVERVILLE
TRINITY
REDDING
LASSEN
WASHOE
PERSHING
HUMBOLDT
9
10
RED BLUFF
6
TEHAMA
13
PLUMAS
LANDER
EUREKA
CHURCHILL
8
MENDOCINO
GLENN
BUTTE
SIERRA
WHITEPINE
WILLOWS
NEVADA
STOREY
FALLON
COLUSA
YUBA
5
CARSON CITY
LAKE
SUTTER
PLACER
DOUGLAS
EL DORADO
LYON
YOLO
SONOMA
FOLSOM
ALPINE
MINERAL
LAKE BERRYESSA
SACRAMENTO
NAPA
AMADOR
SOLANO
SACRAMENTO
1
CALAVERAS
4
3
NYE
MARIN
SAN JOAQUIN
TUOLUMNE
NEW MELONES
MONO
CONTRA COSTA
ESMERALDA
LINCOLN
SAN FRANCISCO
TRACY
ALAMEDA
15
STANISLAUS
MARIPOSA
SAN MATEO
2
SANTA CLARA
MERCED
SANTA CRUZ
11
12
MADERA
FRESNO
FRESNO
SAN BENITO
INYO
CLARK
TULARE
MONTEREY
KINGS
KERN
SAN LUIS OBISPO
SAN BERNARDINO
SANTA BARBARA
VENTURA
LOS ANGELES
ORANGE
RIVERSIDE
Nevada
California
N
S
REGION AREAS
KLAMATH BASIN AREA
NORTHERN CALIFORNIA AREA
CENTRAL CALIFORNIA AREA
LAHONTAN BASIN AREA
SOUTH-CENTRAL CALIFORNIA AREA
REGIONAL OFFICE
AREA OFFICE
FIELD OFFICE
CONSTRUCTION OFFICE
50 25 0 50 Miles
Revised January 7, 2008
1184-202-1

STAFFING – MID PACIFIC CONSTRUCTION OFFICE

The Mid Pacific Construction Office had 81 construction and administrative employees at the close of this month as follows:

Construction Engineer's Office	2
Preaward & Project Management Group	3
Administrative Management	12
Division of Field Engineering	32
Division of Office Engineering	13
Materials Lab Branch	11
Detail/Contract Employees	8

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

	MEANING
ARRA	American Recovery and Reinvestment Act
CCAO	Central California Area Office
CVP	Central Valley Project
LBAO	Lahontan Basin Area Office
MP	Mid Pacific Regional Office
MPCO	Mid-Pacific Construction Office
NCAO	Northern California Area Office
SCCAO	South Central California Area Office
TO	Tracy Office

CCAO

Contract No. R10PC20R15
Specification No. 20-C0649A
Fixed Wheel Gate Rehabilitation–Folsom Dam River Division–Central Valley Project, California
Abide International, Inc., Sonoma, CA

Work Performed:	July	0%
	Time Elapsed	70.1%
	Work Completed	30.9%
Contractor Earnings:	July	$0
	Previous	$2,529,703.18
	Total to Date	$2,529,703.18

Area Office Project Management
Project Manager: Jesse Castro, CC-607

Office Engineering
Contract Administrator: Larry Bowman, MPCO-240

No invoices were received this period.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Bill Linder, MPCO-312

Number of Contract Employees: 0

Work performed:
Contractor was not present at the jobsite.

Contract No. R10PC20019
Specification No. 20-C0689
Folsom Power Plant Generators U1, U2, and U3 Rewind and Excitation System Replacement–American River Division–Folsom Unit–Central Valley Project, California
Andritz Hydro Corp, Charlotte, NC

Work Performed:	July	0%
	Time Elapsed	53.1%
	Work Completed	52.9%
Contractor Earnings:	July	$0
	Previous	$10,281,232.94
	Total to Date	$10,281,232.94

Area Office Project Management
Project Manager: Jesse Castro, CC-607

Office Engineering
Contract Administrator: Madelyn Giles, MPCO-210

No invoices were received this period.

MPCO continued reviewing proposals for Modification 7 which will definitize Modifications 1 and 2. The contractor is putting together a proposal to measure the circularity of the rotors.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Sergio Vivar, MPCO-311; Sean Frische, MPCO-317

Number of Contract Employees: 0

Work performed:
No worked was performed. The contractor demobilized on October 28, 2011, and is scheduled to remobilize in October 2012.

Contract No. R10PC20767
Specification No. 20-C0703
Folsom Power Plant U1, U2, and U3 Replacement Runners–American River Division–Folsom Unit–Central Valley Project, California
Voith Siemens Hydro Power Generation, Inc., York, PA

Work Performed:	July	0%
	Time Elapsed	72.1%
	Work Completed	72.1%
Contractor Earnings:	July	$0
	Previous	$5,283,450.21
	Total to Date	$5,283,450.21

Area Office Project Management
Project Manager: Jesse Castro, CC-607

Office Engineering
Contract Administrator: Madelyn Giles, MPCO-210

No invoices were received this period.

Field Engineering
Construction Manager: N/A supply contract
Construction Representative: N/A supply contract

Number of Contract Employees: N/A supply contract

Work performed: N/A supply contract

Contract No. R10PC20128
Specification No. 20-C0706
New Melones Power Plant Excitation System Replacement–East Side Division–New Melones Unit–Central Valley Project, California
Koontz Electric Company, Inc., Morrilton, AR

Work Performed:	July	0%
	Time Elapsed	81.8%
	Work Completed	99.1%
Contractor Earnings:	July	$0
	Previous	$2,386,512.50
	Total to Date	$2,386,512.50

Area Office Project Management
Project Manager: Terry Brown, CC-606a

Office Engineering
Contract Administrator: Larry Bowman, MPCO-240

No invoices were received this period.

Submittals, including as-built drawings, remain to be provided by the contractor.

The date of substantial completion was May 23, 2012.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Dennis Schuenemann, MPCO-338

Number of Contract Employees: 0

Work performed:

The contractor performed no site work this period. The contractor still has to provide a backup central processing unit per the specifications.

Contract No. R09PC20171
Specification No. 20-C0720
Nimbus Powerplant HVAC System Modification–American River Division–Folsom Unit, Central Valley Project, California
Perryman Mechanical, Inc., West Sacramento, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	79.9%
Contractor Earnings:	July	$0
	Previous	$428,963.09
	Total to Date	$428,963.09

Area Office Project Management
Brian Zewe, CC-607A

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-211

No invoices were received this period.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Todd Dooley, MPCO-314

Number of Contract Employees: 0

Work performed:
All site work, except for punch list items, has been completed. Contractor has not submitted all RSNs

Contract No. R10PC20R49
Specification No. 20-C0733
Lake Berryessa ADA Accessibility Improvements–ARRA Project No. 49.000–Lake Berryessa Recreational Area, Solano Project, California CSRW (DBA)
CSRW, Inc. (DBA) Allied Construction Services, Livermore, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	96.3%
Contractor Earnings:	July	$0
	Previous	$1,009,249.48
	Total to Date	$1,009,249.48

Area Office Project Management
Project Manager: Nicole Johnson, CC-605c

Office Engineering
Contract Administrator: Amber Pierce, MPCO-205

No invoices were received this period.

Modification 5 and Final Modification 6 were executed this period

The remaining work the contractor has to perform is to submit asbuilt drawings.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Henry Garcia, MPCO-310

Number of Contract Employees: 0

Work performed:
Site work was completed in September 2011.

Contract No. R10PC20R37
Specification No. 20-C0738
New Melones ADA Accessibility–ARRA Project No. 50.000–New Melones Recreation Area, East Side Division–Central Valley Project, California
J.I. Garcia Construction, Inc., Fresno, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	96.5%
Contractor Earnings:	July	$0
	Previous	$1,333,872.80
	Total to Date	$1,333,872.80

Area Office Project Management
Project Manager: Nicole Johnson, CC-605c

Office Engineering
Contract Administrator: Amber Pierce, MPCO-205

No invoices were received this period.

The contractor has to submit as-built drawings.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Henry Garcia, MPCO-310

Number of Contract Employees: 0

Work performed:
The contractor continued work on all onsite punch list items.

Contract No. R10PC20114
Specification No. 20-C0754
Folsom Dam–Safety of Dams Modification–MIAD Key-Block–American River Division, Folsom Unit, Central Valley Project, California.
Shimmick Construction Co., Inc., Sacramento, CA

Work Performed:	July	0%
	Time Elapsed	69.0%
	Work Completed	79.9%
Contractor Earnings:	July	$0
	Previous	$36,504,398.26
	Total to Date	$36,504,398.26

Area Office Project Management
Project Manager: Larry Hobbs, CC-106

Office Engineering
Contract Administrator: Larry Bowman, MPCO-240

No invoices were received this period.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Howard Diedrich, MPCO-316; Sean Frische, MPCO-317

Number of Contract Employees: 35

Worked Performed:
CELL E:
Shimmick Construction Co., Inc. finished lean concrete placement for the three remaining lifts from elevation 317' to 342.51' with 7,040 cyds of lean concrete. Cell E has a total of 8,740 cyds lean concrete from finished foundation. Between each lift placement, joint preparation was conducted. After completing lean concrete, Shimmick Construction Co., Inc. started placing select backfill and compaction for the first lift. Backfill compaction was completed to elevation 349' this month. Shimmick Construction Co., Inc. also removed Level 3 and Level 4 bracing.

CELL A:
USBR geologists performed foundation mapping prior to final cleanup and placement of lean concrete. Shimmick Construction Co., Inc. finished lean concrete placement for all four lifts from elevation 309.9' to 342' with 8,940 cyds of lean concrete. Between each lift placement, joint preparation was conducted. Shimmick Construction Co., Inc. also removed Level 3, Level 4, and Level 5 bracing this month.

MODIFICATION 005:
No work was performed on this modification. Shimmick Construction Co., Inc. received the final pipe strut for Level 6.

MODIFICATION 007:
Shimmick Construction Co., Inc. continued operating and adjusting the supplemental dewatering systems for Cells A and E, while consultant HSI continued monitoring and recording data from the supplemental dewatering system for the two cells. Daily average was 372gpm out of both cells.

Shimmick Construction Co., Inc. lowered all the dewatering pumps at Cell A and some in Cell E to minimize the foundation flow.

BOR provided list of pumps sizes and locations for supplemental dewatering wells in Cell F.

Shimmick Construction Co., Inc. continued supplemental dewatering well flushing in Cell C.

MISCELLANEOUS:
Shimmick Construction Co., Inc. removed concrete (guide-wall) waste from site to a recycling facility (Crete Crush).

Contract No. R10PC20R57
Specification No. 20-C0760
Folsom Dam Civil Maintenance Building–American River Division–Folsom Unit, Central Valley Project, California
Building Solutions Inc., Reno, NV

Work Performed:	July	0%
	Time Elapsed	98.0%
	Work Completed	87.40%
Contractor Earnings:	July	$0
	Previous	$5.902,808.14
	Total to Date	$5,902,808.14

Area Office Project Management
Project Manager: Ed Roza, CC-608

Office Engineering
Contract Administrator: Laurie Larson, MPCO-222

No invoices were received this period.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Michael E. Manlick, MPCO-313

Number of Contract Employees: 25

Work performed:
Building Solutions, Inc. completed placing concrete steps at the bottom of roof ladders No. 2 and No. 3. They continued the installation of hardware in Quad A. They set anchors to install the fuel tank card reader and control panel on the slab.

Ace Grading and Paving repaired blemishes and applied 800 gallons of emulsion (fog seal) on the asphalt surface area. They also painted traffic stripes, parking space lines, and pavement markings.

Takahara Landscaping performed weekly landscaping maintenance.

Accent Windows glazed glass for all applicable interior and exterior doors.

American Sheet Metal Partitions installed the toilet partitions, mirrors, paper towel dispensers, T.P. dispensers, and robe hooks in the Men's and Women's room and Men's and Women's Locker rooms of Quad A.

Capital Acoustical installed 2'x 4' tiles in the ceiling of the Multipurpose Room #103, Planners room and the General Office/Training room of Quad A.

Clear View Enterprises completed installing interior trim at the seams on the exterior wall panels.

Lancaster Burns installed flexible joints in dry wall, applied Level 4 finishes and sanded walls within Quad A. They also installed cross bracing on the metal web members of Quad A's trusses

River City Floors completed installation of carpet tiles and rubber base boards in Quads A, B, C and D.

Stanley Security Solutions installed automatic door openers on the six interior doors (113, 115, 117, 118, 119, 120) at the Men's and Women's facilities, and the exterior doors (100 and 103) in Quad A.

James Harris Painting brushed and rolled paint on interior doors, frames and fire sprinkler piping.

Iron Mechanical installed ductwork, piping, pumps and motors for evaporative coolers. They also installed roof mounted fans and the exhaust wall mounted fan adjacent to the welder's area, installed six water meters for domestic service lines and the 3-inch irrigation water meter in Planting Zone #6. Iron Mechanical performed start-up on two of the five split system FCU's and compressors in Quad A. They also installed the self-actuated louvers on the exterior vents in the Sand Blasting room of Quad D.

Final Air Balance balanced the air flow for the HVAC system in Quad A.

California Steam installed the pressure washer; attached it to the water recycler, and supplied the chlorine tank for the system.

Hoist Doctors assembled the automobile lift.

Surface Preparation Solutions installed components for the Media Blast and Dust Collection system.

Foothill Fire Protection completed fire sprinkler head installation in Quad A. They also completed installing deluge drops for the paint storage room in Quad D, and installed tamper switches at the Post Indicator Valve and at the 10-inch backflow device within the easement adjacent to Folsom Auburn Road.

Rex Moore continued installing rigid conduit, flexible conduit, junction boxes and pulling conductors throughout the building. They also performed Megger testing on the cables from the wet-pipe portions of the fire sprinkler system passing through unconditioned or exterior areas of the building. They also erected parking lot lamp poles and terminated associated conductors.

Folsom Dam Civil Maintenance Building

Parking lot striping chalked-out with concrete wheel stops set in place.

Contract No. R10PC20197
Specification No. 20-C0768
Control Upgrade and Modernization of the Gantry and Bridge Cranes at the Folsom Dam and Powerplant–American River Division, Folsom Unit, Central Valley Project, California
Crane America Services, Inc., Livermore, CA

Work Performed:	July	0%
	Time Elapsed	95.6%
	Work Completed	90.0%
Contractor Earnings:	July	$0
	Previous	$1,708,179.58
	Total to Date	$1,708,179.58

Area Office Project Management
Project Manager: Brian Zewe, CC-607A

Office Engineering
Contract Administrator: Madelyn Giles, MPCO-210

Invoice 18 was received this period. It was not for work done this period but for work done through June 30, 2012.

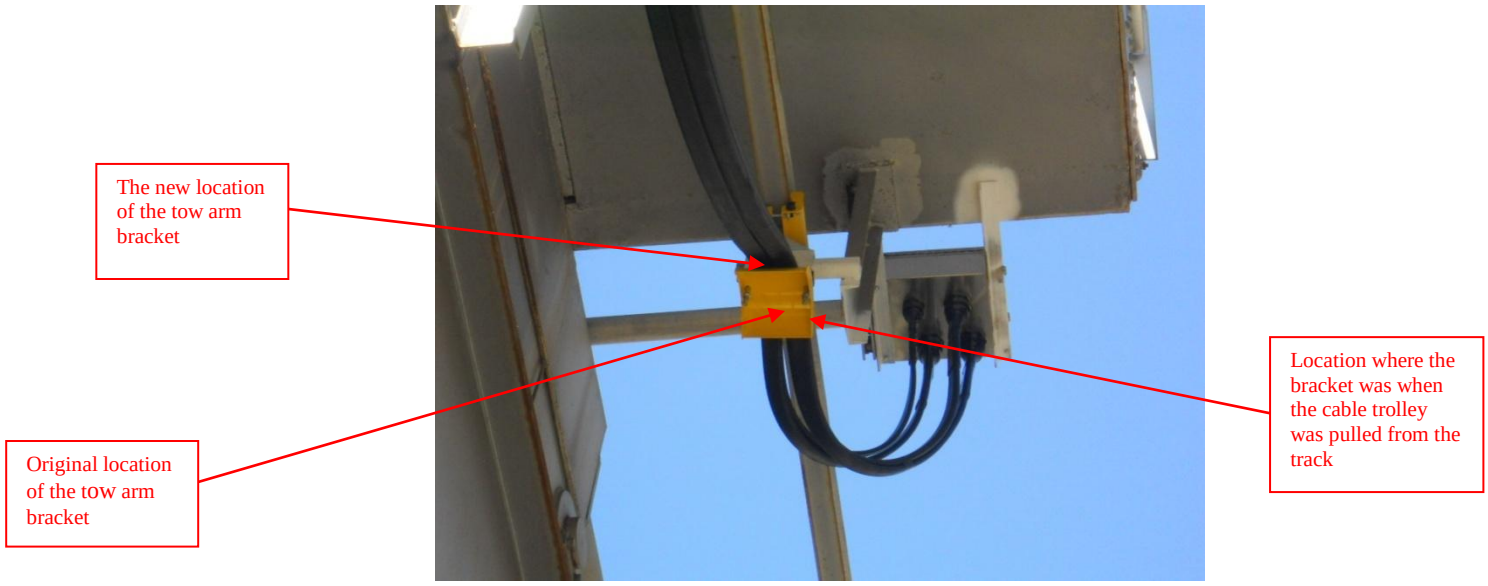
Substantially complete date: June 27, 2012.

The contractor has only punch list items to complete.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Todd Dooley, MPCO-314

Number of Contract Employees: 2
Number of Subcontractor Employees: 4

Work performed:
The contractor worked on punch list items.



Control Upgrade and Modernization of the Gantry and Bridge Cranes at the Folsom Dam and Powerplant
View of the bridge festoon tow arm system on the Folsom Bridge Crane

Contract No. R10PC20859
Specification No. None
Folsom Dam and Powerplant Site Security System – Central Valley Project, California
Trofholz Technologies, Inc., Rocklin, CA

Work Performed:	July	0%
	Time Elapsed	97.6%
	Work Completed	96.0%
Contractor Earnings:	July	$567,799.79
	Previous	$5,546,053.56
	Total to Date	$6,113,853.35

Area Office Project Management
Project Manager: Bill Vanderwaal, MPCO-122

Invoice 30 was received and forwarded the Denver finance office for processing. It was not for work done this period but for work done through June 25, 2012.

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Phil Moseby, MPCO-327

Number of Contract Employees: 5

Work Performed:
Adits 3 and 4:
The contractor continued field testing.

Pump Plant Road Gate:
The contractor continued field testing the pump plant gate. The gate and all the card reader intercoms and loops are operational.

Dikes 4:
The contractor continued installation of the wireless devices on the poles at the dikes. The contractor also installed and tested, with a successful result, the new wireless relay radio/transceiver.

Administrative and Maintenance Area Civil, Electrical and Conduit Installation:
The contractor continued field testing.

Modification 3, Folsom Gates:

Left Wing Gate, Right Wing Gate, and Garage Vehicle Gate:

At each of these three locations the contractor installed the gate arms and tested, with a successful result, the gate. The card reader intercoms and loops are operational at each gate.

Folsom Dam and Powerplant Site Security System
The Protection Technologies, Inc. Microwave at the dam

LBAO

Contract No. R11PC20158
Specification No. 20-C0777
Stampede Powerplant and Switchyard Recoatings–Stampede Dam–Stampede Division–California
Farr Construction Corporation, Sparks, NV

Work Performed:	July	0%
	Time Elapsed	92.2%
	Work Completed	0%
Contractor Earnings:	July	$0
	Previous	$0
	Total to Date	$0

Area Office Project Management
Project Manager: Locke Hahne, LO-400

Office Engineering
Contract Administrator: Amber Pierce, MPCO-205

No invoices were received this period.

Field Engineering
Construction Manager: Reynaldo Garcia, MPCO-310
Construction Representative: Mike Rondoni, MPCO-319

Number of Contract Employees: 0

Work performed:
No work was performed. The contractor is scheduled to perform the work in August 2012.

NCAO

Contract No. R10PC20746
Specification No. 20-C0700
Coleman National Fish Hatchery Water Intakes Rehabilitation–Shasta Division–Central Valley Project, California
Shimmick Construction, Inc., Sacramento, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	97.8%
Contractor Earnings:	July	$0
	Previous	$7,915,099.25
	Total to Date	$7,915,099.25

Area Office Project Management
Project Manager: Hank Harrington, NC-210

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

No invoices were received this period.

The contractor has only to complete final submittals.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: Daniel Pavone, MPCO-333

Number of Contract Employees: 0

Work performed:
Site work is complete.

Contract No. R10PC20744
Specification No. 20-C0712
J.F. Carr Power Plant, Generator G1 and G2 Rewinds–NCAO–Shasta Power Plant–Sacramento River Division–Central Valley Project California
National Electric Coil, Inc., Columbus, OH

Work Performed	July	0%
	Time Elapsed	100%
	Work Completed	98.0%
Contractor Earnings	July	$0
	Previous	$14,918,516.31
	Total to Date	$14,918,516.31

Area Office Project Management
Program Manager: John Dotter, NC-261

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

No invoices were received this period.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: Frank Medberry, MPCO-341

Number of Contract Employees: 2

Worked Performed:
The contractor began and completed rotor balancing and commissioning this period.

Contract No. R09PC20126
Specification No. 20-C0727
J.F. Carr Penstock Relining–NCAO, Shasta Power Plant–Sacramento River Division–Central Valley Project, California
Extreme Coatings, Inc., Pasco, WA

Work Performed	July	0%
	Time Elapsed	100%
	Work Completed	99.96%
Contractor Earnings	July	$0
	Previous	$2,959,066.97
	Total to Date	$2,959,066.97

Area Office Project Management
Program Manager: George Girgis

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

Invoice 24 was received and forwarded to the Denver finance office for processing. It was not for work done this period but for work done through June 25, 2012, and was a release of retention funds.

The only contract requirement remaining is to complete final submittals.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: Frank Medberry, MPCO-341

Number of Contract Employees: 0

Work performed:
Site work was completed in April 2012.

Contract No. R10PC20R11
Specification No. 20-C0730
Red Bluff Pumping Plant and Fish Screen, Pumps and Motors–Sacramento River Division–Sacramento Canals Unit–Central Valley Project, California
MWI Corporation, Deerfield Beach, FL

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	98.4%
Contractor Earnings:	July	$0
	Previous	$6,851,884.00
	Total to Date	$6,851,884.00

Area Office Project Management
Project Manager: Bill Vanderwaal, MPCO-122

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

This is a supply contract.

No invoices were received this period.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: None

Number of Contract Employees: Not applicable as this is a supply contract.

Work Performed:
No work was performed. All pumps have been installed.

Contract No. R10PC20R09
Specification No. 20-C0740
Red Bluff Pumping Plant and Fish Screen, Landfill Excavation and Canal, Siphon and Access Bridge–Sacramento River Division–Sacramento Canals Unit–Central Valley Project, California
West Bay Builders, Red Bluff, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	95.7%
Contractor Earnings:	July	$0
	Previous	$22,275,999.59
	Total to Date	$22,275,999.59

Area Office Project Management
Project Manager: Bill Vanderwaal, MPCO-122

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

No invoices were received this period.

A large modification was being prepared this period.

The contractor still has to provide some certified payrolls and final submittals.

Substantially complete date was December 2, 2011.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: Daniel Pavone, MPCO-333

Number of Contract Employees: 0

Work Performed:
No work was performed as site work was completed in January 2012.

Contract No. R10PC20R33
Specification No. 20-C0752
Red Bluff Pumping Plant and Fish Screen–Sacramento River Division–Sacramento Canals Unit–Central Valley Project, California
Balfour Beatty Infrastructure, Inc., Red Bluff, CA

Work Performed:	July	0%
	Time Elapsed	94.4
	Work Completed	96.3%
Contractor Earnings:	July	$1,069,535.17
	Previous	$72,417,372.41
	Total to Date	$73,486,907.58

Area Office Project Management
Project Manager: Bill Vanderwaal, MPCO-122

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

Invoice 25 was received and forwarded to the Denver finance office for processing. It was not for work done this period but for work done through June 30, 2012.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: Dave Derk, MPCO-334; Luke Smith, MPCO-309

Number of Contract Employees: 78

Work Performed:
Up to 12 Balfour Beatty employees performed the following work.

- Finished installation of the solid panels in Bays 1 through 60 and continued concrete repair at the fish screen deck
- Completed punch list items
- Placed concrete for the dredge pipeline and buried plug valve boxes
- Continued general site cleanup.

Pile drivers
- Installed sheet pile caps and handrail on top of the north canal sheet pile wall
- Installed caps and grouted the remaining tiebacks on the north canal wall
- Installed a platform and ladder on the east access radius wall

Two All Commercial Fence employees continued installation of the site perimeter fence. Work progressed along the west border of the project site, between the upstream end of the fish screen

and the afterbay canal, as well as along the northeast side of the pumping plant, between the east access radius wall and station 17+00 of the A3 line.

An owner/operator of All Street Sweeping, Inc. cleaned the asphalt surface on the Gen III property where potentially contaminated stockpiles were formerly located. The operator was subcontracted through Pacific States to clean the asphalt surface where potentially contaminated stockpiles were formerly located.

A technician with Automated Valve Services reprogrammed the pumping plant butterfly valves.

Three Ballard's Diving and Salvage employees installed a support rail for a flow meter in Tehama-Colusa Canal.

Six Central Sierra Electric electricians:

- Installed the power receptacles on the fish screen
- Installed the fire alarm signaling and initiating system in the pumping plant control building and aided with alarm/fault troubleshooting at the medium voltage variable frequency drives(VFDs)
- Installed the diesel engine generator and fuel tank in the switchyard.
- Installed communication hardware at Tehama Colusa Canal Check Stations 1 and 2
- Installed the solar panel for the Tehama Colusa Canal flow meter
- Installed a communications panel, rigid conduit, and cable at the Corning Pumping Plant
- Installed with subcontractors, Tesco and Ultra Link Cable Systems Inc., fiber optic lines and a communications rack inside the old Bureau of Reclamation (now Tehama-Colusa Canal Water Authority (TCCA)) office on Altube Avenue.

Two Eaton Corporation engineers installed hour meters on each of the eleven VFDs.

Three FD Thomas employees painters touch-up painted and installed joint sealant at the fish screen and pumping plant.

Seven Meyers Earthwork employees

- Continued excavation and backfill for the dredge pipeline
- Installed two 8" corrugated metal pipe down-drains along the north slope of the stockpile
- Installed a drainage swale along the top perimeter of the stockpile
- Graded over erosion damage on the stockpile slopes at the Corning Canal material stockpile
- Installed gravel surfacing for onsite access roads
- Began installing a drainage swale and storm water drain downstream of Red Bank Creek along the west side of the canal.

Two Munson Pumps Services employees finished installation and pressure testing of the 14" diameter high density polyethylene pipeline.

Five Pisor Fence Company employees installed guardrail at the fish screen and on the pumping plant deck.

Two Sabah International technicians continued installation and testing of the fire alarm/suppression system in the control building.

Three Tesco Controls/Frisch Engineering technicians programmed the supervisory control and data acquisition and the pumping plant programmable logic controller systems at the pumping plant and fish screen, and installed a new communications rack inside the TCCA office.

Five Ultra Link Cabling Systems, Inc. employees pulled inner-ducts and fiber optic cables between the communication panel in the pumping plant control building and pulled fiber optics between the patch panel adjacent to Red Bank Creek and between the Corning pumping plant and the communications rack inside the TCCA office building.

One WV Alton employee installed metal flashing on the control building and installed smoke detectors on the exhaust ductwork of the two air conditioning units in the motor control room.

Two Eaten Corp. representatives install hour meters on each of the eleven medium voltage variable frequency drives.
Red Bluff Pumping Plant and Fish Screen

Contract No. R10PC20102
Specification No. 20-C0755
Spring Creek Powerplant Generators G1 and G2 Rewinds–NCAO–Central Valley Project, California
Andritz Hydro Corp., Charlotte, NC

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	66.0%
Contractor Earnings:	July	$0
	Previous	$7,502,740.65
	Total to Date	$7,502,740.65

Area Office Project Management
Project Manager: Joe Ascoli, NC-650

Office Engineering
Contract Administrator: Kevin Jacobs, MPCO-214

No invoices were received this period.

A modification is in the works to change the outage schedule and change the contract completion date from May 2, 2012, to June 28, 2013.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: Frank Medberry, MPCO-341

Number of Contract Employees: 5

Work performed:
The contractor performed air gap measurements between the rotor and stator to verify unit alignment. The measurements determined the unit will require realignment, which be done in August 2012.

Contract No. R12PC20044
Specification No. 20-C0774a
Station Service Switchgear Replacement–Trinity River Division–Central Valley Project, California
Eaton Corporation, Raleigh, NC

Work Performed:	July	0%
	Time Elapsed	31.9%
	Work Completed	0.4%
Contractor Earnings:	July	$0
	Previous	$9,600.59
	Total to Date	$9,600.59

Area Office Project Management
Project Manager: Jeff Gifford, NC-221

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-214

Notice to Proceed date: April 2, 2012

No invoices were received this period.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: Frank Medberry, MPCO-341

Number of Contract Employees: 0

Work performed:
Onsite work has not begun. Mobilization is scheduled to begin at Spring Creek Power Plant on October 16, 2012, at JF Carr Power Plant on December 20, 2012, and at Trinity Power Plant on February 6, 2013.

Contract No. R11PC20124
Specification No. 20-C0780
Coleman National Fish Hatchery Barrier Weir Site Modifications–Shasta Division–Central Valley Project, California
Contractor Services Group, Inc., West Sacramento, CA

Work Performed:	July	5.2%
	Time Elapsed	83.2%
	Work Completed	12.7%
Contractor Earnings:	July	$64,947.61
	Previous	$49,215.61
	Total to Date	$114,163.22

Area Office Project Manager
Jim Goodwin, MP-210

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-211

Invoices 4 and 5 were received this period, 4 for work through May 31, 2012, and 5 for work through this period.

Notice to proceed was issued October 13, 2011.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: Fernando Pavone, MPCO-333

Number of Contract Employees: 19

Work performed:
Contractor Services Group:

- Installed the modified handrails at the fish ladder and viewing zone.
- Assisted subcontractor Port a Dam with the installation of the coffer dams.
- Installed two submersible pumps to dewater the area at the viewing platform coffer dam.
- Installed the new bulkhead gate.

Subcontractor Get'er Done:

- Installed the formwork and reinforcing, and placed the concrete cap for the fish ladder.
- Drilled and grouted the handrail sleeves on the ladder cap and walkway.
- Installed the guides for the new bulkhead gate at the existing fish ladder.

At the fish ladder, subcontractor, Material Testing, Inc., conducted the pull test for the concrete cap anchor bars, and performed concrete tests on the cap.

Port a Dam installed the coffer dams at the upstream overshot gate and at the viewing platform.

Coleman National Fish Hatchery Barrier Weir Site Modifications

The dewatering system for the new viewing platform area

Contract No. R12PC20053
Specification No. 20-C0789
Shasta Powerplant Control and Computer Room HVAC Replacement–Shasta Division–Central Valley Project, California
Ray-Mac Mechanical, Inc., Mt. Shasta, CA.

Work Performed:	July	0%
	Time Elapsed	83.2%
	Work Completed	0%
Contractor Earnings:	July	$0
	Previous	$0
	Total to Date	$0

Area Office Project Management
Project Manager: Jeff Gifford, NC-221

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-211

Notice to Proceed date: April 26, 2012

No invoices were received this period.

MPCO is reviewing the contractor's value engineering proposal to modify the heating, ventilation, and air conditioning systems.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: Frank Medberry, MPCO-341

Number of Contract Employees:

Work performed:
Site work has not begun. It is scheduled to begin in August 2012.

Contract No. R10PC20025
Specification No. None
Coleman Fish Hatchery Water Intakes Vegetation Replacement and Monitoring–Shasta Division–Central Valley Project, California
Tehama Environmental Solutions, Inc., Red Bluff, CA

Work Performed:	July	` 0%
	Time Elapsed	35.3%
	Work Completed	87.4%
Contractor Earnings:	July	$0
	Previous	$619,058.07
	Total to Date	$619,058.07

Area Office Project Management
Project Manager: Hank Harrington, NC-210

No invoices were received this period.

Office Engineering
Contract Administrator: Jacquelyn Olds, MPCO-202

No invoices were received this period.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: Daniel Pavone, MPCO-333

Number of Contract Employees: 0

Work performed:
The contractor's current activity consists of maintaining vegetation it planted in 2010.

Contract No. R11PC20235
Specification No. None
Red Bluff Diversion Dam, Fish Passage Improvement Project, Terrestrial Mitigation–Sacramento Canal Units–Sacramento River Division–Central Valley Project, California
Tehama Environmental Solutions, Inc., Red Bluff, CA

Work Performed:	July	0%
	Time Elapsed	6.6%
	Work Completed	1.8%
Contractor Earnings:	July	$0
	Previous	$79,196.00
	Total to Date	$79,196.00

Area Office Project Management
Project Manager: Bill Vanderwaal, MPCO-122; Hank Harrington, NC-210

No invoices were received this period.

Office Engineering
Contract Administrator: Matthew Bryne, MPCO-255

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: Daniel Pavone, MPCO-333

Number of Contract Employees: 13

Work performed:
With the contractor's project manager onsite, Subcontractor, Meyers Earthwork, continued excavation of the fish passage channel and the flood plain between stations 1+00 and 29+00. Meyers disposed of the material at Crain's property located near the construction site except for a portion used to process cobble bedding and bar material.

The crew excavated and disposed approximately 36,000 cubic yards of material. Through this period Meyers Earthwork has excavated approximately 99,000 cubic yards of material and delivered approximately 127 loads of rip rap.

Red Bluff Diversion Dam, Fish Passage Improvement Project, Terrestrial Mitigation Subcontractor, Meyers Earthwork, excavating between stations 1+00 and 8+00

SCCAO

Contract No. R10PC20R32
Specification No. 20-C0749
Fish Screen Structure Phase 3, Contra Costa Canal–Central Valley Project, California
Flatiron West, Inc., Oakley, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	99.4%
Contractor Earnings:	July	$0
	Previous	$13,935,225.66
	Total to Date	$13,935,225.66

Area Office Project Management
Project Manager: John Dealy, TO-406

No invoices were received this period.

Office Engineering
Contract Administrator: Larry Bowman, MPCO-240
Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Henry Garcia, MPCO-310

Number of Contract Employees: 2

Work performed:
Contractor was onsite a couple of days working on punch list and warranty items.

Contract No. R10PC80R23
Specification No. 20-C0761
Delta-Mendota Canal–California Aqueduct Intertie–Central Valley Project–California
Shimmick Construction Company, Inc., Tracy, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	99.3%
Contractor Earnings:	July	$0
	Previous	$15,080,969.87
	Total to Date	$15,080,969.87

Area Office Project Management
Project Manager: Erika Kegel, MP-730

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-211

No invoices were received this period.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: Chris Van Deusen, MPCO-345

Number of Contract Employees: 3

Work performed:
All site work except for punch list items was completed in May 2012. The contractor and subcontractors worked on punch list items this period.

Purchase Order No. R11PC20155
Specification No.20-C0776a
Delta Cross Channel Gate Control and Lighting Improvements–Central Valley Project, California
Sierra Range Construction, Visalia, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	88.7%
Contractor Earnings:	July	$0
	Previous	$112,405.58
	Total to Date	$112,405.58

Area Office Project Management
Project Manager: Warren Feng, TO-438

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-211

No invoices were received this period.

The contractor dealt with the Contracting Officer on the issue that there are missing spare parts. The issue was not resolved.

Field Engineering
Construction Manager: Henry Garcia, MPCO-310
Construction Representative: Henry Garcia, MPCO-310

Number of Contract Employees: 0

Work Performed:
No work done. Field staff met with Area Office staff to discuss remaining punch list items. The contractor will be onsite in August to complete these.

Contract No. R11PC20185
Specification No. 20-C0778
Tracy 13.8kV Switchgear/Breaker Replacement–Tracy Pumping Plant and Substation–Central Valley Project, California
Contra Costa Electric Corp., Martinez, CA

Work Performed:	July	0%
	Time Elapsed	22.6%
	Work Completed	8.0%
Contractor Earnings:	July	$0
	Previous	$925,459.88
	Total to Date	$925,459.88

Area Office Project Management
Project Manager: Warren Feng, TO-438

Office Engineering
Contract Administrator: Amber Pierce, MPCO-205

This is a design/build contract.

No invoices were received this period.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: Not yet determined.

Number of Contract Employees: 0

Work performed:
No site work was performed because the contractor has not yet mobilized to the site.

Regional

Contract No. R10PC20005
Specification No. 20-C0717
North Fork Screens and Ladders–Battle Creek Salmon and Steelhead Restoration Project, California
Syblon Reid Contractors, Folsom, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	97.1%
Contractor Earnings:	July	$0
	Previous	$11,912,247.39
	Total to Date	$11,912,247.39

Area Office Project Management
Project Manager: Mary Marshall, MP-203

Office Engineering
Contract Administrator: Kent Perkes, MPCO-225

No invoices were received this period.

The only thing remaining for the contractor to perform is to gain approval of a few final submittals including as-built drawings.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: John Pospishil, MPCO-321

Number of Contract Employees: 0

Work performed:
The contractor completed all contract site work in December 2011, and demobilized its field office.

Contract No. R10PC20R48
Specification No. 20-C0741
Gray Lodge Wildlife Area and Pixley National Wildlife Refuge Wetlands–Groundwater Well Construction–ARRA Project No. 28.113–Central Valley Project–East Side Division, California
Sansone Company, Inc., San Luis Obispo, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	97.0%
Contractor Earnings:	July	$0
	Previous	$4,791,270.59
	Total to Date	$4,791,270.59

Area Office Project Management
Project Manager: Sonya Nechanicky, MP-410

Office Engineering
Contract Administrator: Laurie Larson, MPCO-222

No invoices were received this period.

Field Engineering
Construction Manager: John E. Nelson, MPCO-328
Construction Representative: Richard T. Nead, MPCO-342

Number of Contract Employees: 2

Work performed:
Pixley
No onsite construction activities this month, contractor has met all of his field contractual obligations and substantially complete has been issued.

Gray Lodge
Field Pump Test
Mike Maggiora of Maggiora Brothers Drilling and Allan Strong with Telstar Instruments Inc. met with the refuge manager Andy Atkinson and staff on July 16, 2012, to demonstrate the well operation and maintenance procedures.

Contract No. R10PC20R39
Specification No. 20-C0744
Volta Wasteway Refuge Level 2 Diversification Phase I Project–ARRA Project No. 28.129–Central Valley Project, California
Sansone Company Inc., San Luis Obispo, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	99.5%
Contractor Earnings:	July	$0
	Previous	$1,704,452.80
	Total to Date	$1,704,452.80

Area Office Project Management
Project Manager: Linda Colella, MP-410

Office Engineering
Contract Administrator: Laurie Larson, MPCO-222

No invoices were received this period.

All submittals complete, contractor is submitting final REA.

The substantially complete date was August 12, 2011.

Field Engineering
Construction Manager: Steve Holmes, MPCO-320
Construction Representative: John Nelson, MPCO-328

Number of Contract Employees: 0

Work performed:
No on site work was performed as all site work has been completed.

Contract No. R10PC20R42
Specification No. 20-C0746
Hydropower Facility Modifications-Stage 1–Battle Creek Salmon and Steelhead Restoration Project, California
RTA Construction/Ray Toney JV, Redding, CA

Work Performed:	July	0%
	Time Elapsed	85.7%
	Work Completed	61.8%
Contractor Earnings:	July	$0
	Previous	$4,903,509.47
	Total to Date	$4,903,509.47

Area Office Project Management
Project Manager: Mary Marshall, MP-203

Office Engineering
Contract Administrator: Kent Perkes, MPCO-225

No invoices were received this period.

Field Engineering
Construction Manager: Randy Wyatt, MPCO-305
Construction Representative: John Pospishil, MPCO-321

Number of Contract Employees: 28

Work performed:
Penstock Bypass Pipeline: The contractor continued backfilling the 66-inch reinforced concrete pipe. It removed the cast in place 66" reinforced concrete pipe from New Wasteway Structure. It continued spreading permanent stockpiles and topsoil in Use Area 4.

Penstock Bypass Chute: Muse concrete completed concrete placement for the bypass chute and patched previously placed concrete on the interior of the bypass chute. The contractor completed installation of the bypass chute drain system.

Mount Lassen Trout Farm Pipe: The contractor finished installation of the permanent Mount Lassen Trout Farm Pipe.

Lower Jump Basin: The contractor continued to backfill the right and left sides of the lower jump basin and completed installing handrail for the lower jump structure. Muse Concrete patched the Baffled Outlet structure and the tailrace structure as the backfill elevation increased. The 72-inch reinforced concrete pipe was installed from the Baffled Outlet to the field closure at the Lower Jump structure this period.

The 84-inch reinforced concrete pipe was installed from station 06+60.82 to station 05+07.15 this period.

Tailrace Inlet: The contractor started installing the sheet piling cofferdam.

A Road: The contractor continued excavation and backfilling at A Road.

The contractor compacting backfill for the 66-inch bypass pipeline station 10+50
Hydropower Facility Modifications-Stage 1

Purchase Order No. R10PX20R45
Specification No. 20-C0750
Drought Relief, Well Enhancements–ARRA Project No. 28.000–Central Valley Project California
Hydro Resources–West, Inc., Winnemucca, NV

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	47.2%
Contractor Earnings:	July	$0
	Previous	$603,766.10
	Total to Date	$603,766.10

Area Office Project Management
Project Manager: Kevin Clancy, MP-410

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-211

No invoices were received this period.

Acquisition Services is working on a modification to deobligate the excess funds.

Field Engineering
Construction Manager: John Nelson, MPCO-328
Construction Representative: Mike McCarty, MPCO-308

Number of Contract Employees: 0

Work performed:
No work was done this period as site work was completed in May 2012.

Purchase Order No. R10PX20R54
Specification No. 20-C0750
Drought Relief, Well Enhancements–ARRA Project No. 28.000–Central Valley Project Don Pedro Pump, LLC–Turlock, CA

Work Performed:	July	0%
	Time Elapsed	100%
	Work Completed	86.5%
Contractor Earnings:	July	$0
	Previous	$1,084,249.60
	Total to Date	$1,084,249.60

Area Office Project Management
Project Manager: Kevin Clancy, MP-410

Office Engineering
Contract Administrator: Ryan Hennigan, MPCO-211

No invoices were received this period.

Field Engineering
Construction Manager: John Nelson, MPCO-328
Construction Representative: Mike McCarty, MPCO-308

Number of Contract Employees: 0

Work performed:
No work was performed. Contractor is waiting for Pacific Gs and Electric to provide power.

Contract No. R10PC20R80
Specification No. 20-C0759
Drought Relief–Construction of New Wells–ARRA Project No. 28.002–California
Layne Christensen Company, Fontana, CA

Work Performed:	July	9.0%
	Time Elapsed	100%
	Work Completed	84.4%
Contractor Earnings:	July	$1,529,121.54
	Previous	$12,090,550.34
	Total to Date	$13,619,671.88

Area Office Project Management
Project Manager: Kevin Clancy, MP-410

Office Engineering
Contract Administrator: Laurie Larson, MPCO-222

Invoice 12 was received and forwarded to the Denver finance office for processing.

Field Engineering
Construction Manager: John E. Nelson, MPCO-328
Construction Representative: Quint I. McCabe, MPCO-304

Modification executed February 23, 2012 that extended the contract until June 30, 2012.

Number of Contract Employees: 4

Work performed:
WSID Well 33.2 four hour start up servicing and field-testing/monitoring
GLWDs Well 8.03 & 8.06 excavated pot holes to expose the power supply conduits for PG&E inspection
GLWD Well 8.04 set the control cabinet, topped out the motor and county inspection, power supply conduit tied in
GLWD Well 8.01 installed pump and component, topped out the motor, county inspection, installed power supply conduit tie-in and installed discharge pipe and flow meter
DPWD Well 50a pulled and demobilized test pump and equipment
DPWD Well 51 installed power supply conduit tie-in

Upcoming Work:
WSID Wells 33.1 install pumping equipment, set control cabinet, electrical top out, and four hour start up
GLWD Wells 8.04 four hour start up
GLWD Wells 8.01 four hour start up
GLWD Well 8.06 four hour start up

Contracts in Warranty Status

R09PC20R03, 20-C0677 Transformer K1A and K2A Replacements, Folsom Power
There was no Office Engineering Administrative activity this period.
This contract has not been contractually closed (5-year warranty for K1A extends to January 30, 2016, and that for K2A extends to January 4, 2017).

R09PC20017 20-C0708 Marble Bluff Fish Handling Building Reroofing
There was no Office Engineering Administrative activity this period.
This contract has not been contractually closed (5-year roof guarantee extends to March 5, 2015).

R10PC20176 20-C0713 New Melones Resource Area Building Re-roofing
There was no Office Engineering Administrative activity this period.
This contract has not been contractually closed (3-year roof guarantee extends to March 25, 2013).

R10PC20R24, 20-C0751 Folsom Dam, Safety of Dams Modifications, Spillway Piers and Gates
There was no Office Engineering Administrative activity this period.

R09PC20147 20-C0758 New Melones Lake Restroom Building Reroofing
There was no Office Engineering Administrative activity this period.
This contract has not been contractually closed (3-year roof guarantee extends to May 20, 2014).

R10PC20185 20-C0762 Whiskeytown Lake Temperature Control Curtain
There was no Office Engineering Administrative activity this period.
This contract has not been contractually closed (5-year warranty for the geomembrane material extends to June 16, 2016.

R12PC20055, 20-C0776b Delta Cross Channel Gate Hoist Wire Rope Replacement
There was no Office Engineering Administrative activity this period.
This contract has not been contractually closed (1-year roof guarantee extends to May 11, 2013).

R10PC20196, 20-C0769 Control Upgrade and Modernization of the Gantry Crane at Nimbus Powerplant
There was no Ofice Engineering Administrative activity this period.

R11PC20087 Coleman National Fish Hatchery, Water Intake No. 3 Repairs to Fish Screen
There was no Office Engineering Administrative activity this period.
This contract has not been contractually closed (1-year warranty extended to July 13, 2012).

Aggregate Gradation Summary

From 07/01/2012 to 07/31/2012

Specification : 20-C0746
Mix Number : ALL Combined for This Specification
Project : Battle Creek
Feature : Hydropower Facility Modifications Stage 1

Sand Gradations (ASTM)

	Percent Passing											
Date	No. 3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	% -200	FINE MOD	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	100.0	85.0	60.0	30.0	10.0					
Spec Min %	100.0	95.0	80.0	50.0	25.0	10.0	2.0					
07/03/2012	100.0	99.5	81.6	56.7	34.9	16.1	6.2	3.50	3.05	3.30	2.60	2.20
07/09/2012	100.0	99.5	82.0	56.5	32.4	12.3	4.2	2.70	3.13	1.70	2.60	2.20
07/17/2012	100.0	99.4	84.1	58.4	33.0	13.1	4.6	2.80	3.07	2.40	2.60	2.20
Average	100.0	99.5	82.6	57.2	33.4	13.8	5.0	3.00	3.09	2.47	2.60	2.20
S.D.	0.0	0.1	1.4	1.0	1.3	2.0	1.1	0.44	0.04	0.80	0.00	0.00
C.O.V.	0.0	0.1	1.7	1.8	3.8	14.4	21.8	14.53	1.33	32.52	0.00	0.00

Aggregate Gradation Summary

From 07/01/2012 to 07/31/2012

Specification : 20-C0746
Mix Number : ALL Combined for This Specification
Project : Battle Creek
Feature : Hydropower Facility Modifications Stage 1

Nominal Size : #4 - 1" (ASTM)

Coarse Aggregate Gradations

	Percent Passing Screen Sizes in Inches or Sieve Size Shown								
Date	1 1/2"	1"	1/2"	#4	#8	% -200	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	60.0	10.0	5.0				
Spec Min %	100.0	95.0	25.0	0.0	0.0				
07/03/2012	100.0	98.9	55.0	11.8	7.7	2.20	2.20	2.54	2.40
07/09/2012	100.0	96.9	37.0	2.5	1.9	0.20	1.30	2.54	2.40
07/17/2012	100.0	98.9	50.6	5.3	2.8	1.30	2.10	2.54	2.40
Average	100.0	98.2	47.5	6.5	4.2	1.23	1.87	2.54	2.40
S.D.	0.0	1.1	9.4	4.8	3.1	1.00	0.49	0.00	0.00
C.O.V.	0.0	1.1	19.8	73.2	74.4	81.22	26.43	0.00	0.00

Aggregate Gradation Summary

From 07/01/2012 to 07/31/2012

Specification : 20-C0780
Mix Number : ALL Combined for This Specification
Project : Central Valley
Feature : Coleman Fish Hatchery Weir

Sand Gradations (ASTM)

	Percent Passing											
Date	No. 3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	% -200	FINE MOD	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	100.0	85.0	60.0	30.0	10.0					
Spec Min %	100.0	95.0	80.0	50.0	25.0	10.0	2.0					
07/03/2012	100.0	99.5	81.6	56.7	34.9	16.1	6.2	3.50	3.05	3.30	2.60	2.20
Average	100.0	99.5	81.6	56.7	34.9	16.1	6.2	3.50	3.05	3.30	2.60	2.20
S.D.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
C.O.V.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00

Aggregate Gradation Summary

From 07/01/2012 to 07/31/2012

Specification : 20-C0780
Mix Number : ALL Combined for This Specification
Project : Central Valley
Feature : Coleman Fish Hatchery Weir

Nominal Size : #4 - 1 1/2" (ASTM)

Coarse Aggregate Gradations

	Percent Passing Screen Sizes in Inches or Sieve Size Shown								
Date	2"	1 1/2"	3/4"	3/8"	#4	% -200	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	70.0	30.0	5.0				
Spec Min %	100.0	95.0	35.0	10.0	0.0				
07/03/2012	100.0	97.8	57.3	18.6	3.2	0.60	1.10	2.54	2.10
Average	100.0	97.8	57.3	18.6	3.2	0.60	1.10	2.54	2.10
S.D.	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
C.O.V.	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00

Concrete Construction Data

Concrete Class: Structural Concrete
Report of Mixes Used From 06/01/2012 to 07/31/2012

Mix Design Number: F670AFPX7
Specification Number: 20-C0746
Project: Battle Creek
Feature: Hydropower Facility Modifications Stage 1

Date Time	y^3 of Conc	Percent Of Coarse Aggregate in each size Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard Pounds Water	Cem	Poz	Sand	C.A.	AD#3	Oz AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Fresh Concrete Tests Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	Compressive Strength Of Individual Specimens (psi) 3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
07/03/2012																													
06:20	15.50	51.8	100.0	0.0	0.0	0.0	292	541	99	1512	1376	0	6.6	25.0	18.8	0.0	10.5	87	1.25	141.5	0.46	2.7	3.9		4050	5640			
																									4150	5700			
Design		47.4	100.0	0.0	0.0	0.0	280	536	95	1357	1507	0	3.1	25.2	18.9	0.0			3.00	139.8	0.44	4.0	4.0			4000			
AVG.		51.8	100.0	0.0	0.0	0.0	292	541	99	1512	1376	0	6.6	25.0	18.8	0.0	10.5	87	1.25	141.5	0.46	2.7	3.9		4100	5670			

Bureau.....: Required average strength = -9117 psi at 28 days. Based on 90% exceeding the design strength of 4000 psi & C.O.V. (n=54) = **.*
ACI.....: Required average strength = 17639 psi at 28 days (n=54)
CURE METHOD..: Water Tank with an Average Cure Temperature of 60 - 80 (F)

Concrete Construction Data

Concrete Class: Stuructural Concrete
Report of Mixes Used From 06/01/2012 to 07/31/2012

Mix Design Number: F670GFPW8
Specification Number: 20-C0746
Project: Battle Creek
Feature: Hydropower Facility Modifications Stage 1

Date Time	y^3 of Conc	Percent Of Coarse Aggregate in each size Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard Pounds Water	Cem	Poz	Sand	C.A.	Oz AD#3	AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Fresh Concrete Tests Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	Compressive Strength Of Individual Specimens (psi) 3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
06/18/2012																													
09:08	4.75	46.1	100.0	0.0	0.0	0.0	250	519	96	1358	1549	0	5.0	49.7	30.3	0.0	9.1	85	3.00	139.7	0.41	5.3	4.6		4390	4780			
																									3710	4650			
07/09/2012																													
05:58	13.00	47.4	100.0	0.0	0.0	0.0	251	517	93	1384	1503	0	6.0	49.1	33.5	0.0		78	3.00	138.8	0.41	5.9	5.2		3770	######			
																									3560	######			
07/17/2012																													
11:47	14.50	48.9	100.0	0.0	0.0	0.0	258	529	92	1453	1481	0	7.2	49.8	34.1	0.0		83	2.50	141.2	0.42	4.1	4.5		3150	######			
																										######			
Design		44.4	100.0	0.0	0.0	0.0	285	536	95	1267	1585	0	2.1	50.4	50.4	0.0			6.00	139.6	0.45	4.0	4.0			4000			
AVG.		47.5	100.0	0.0	0.0	0.0	253	522	94	1398	1511	0	6.1	49.5	32.6	0.0	9.1	82	2.83	139.9	0.41	5.1	4.8		3716	4715			
S.D.		1.4	0.0	0.0	0.0	0.0	4	6	2	49	35	0	1.1	0.4	2.0	0.0	0.0	4	0.29	1.2	0.00	0.9	0.4		448	92			
C.O.V		3.0	0.0	0.0	0.0	0.0	1.7	1.2	2.2	3.5	2.3	0.0	17.5	0.8	6.2	0.0	0.0	4.3	10.2	0.9	1.1	17.4	7.9		12.0	1.9			

Bureau.....: Required average strength = 4740 psi at 28 days. Based on 90% exceeding the design strength of 4000 psi & C.O.V. (n=41) = 12.2
ACI.....: Required average strength = 4736 psi at 28 days (n=41)
CURE METHOD..: Water Tank with an Average Cure Temperature of 70 - 76 (F)

= Specimen not broken as of report date.

Concrete Construction Data

Concrete Class: Structural
Report of Mixes Used From 06/01/2012 to 07/31/2012

Mix Design Number: F740QFPX7
Specification Number: 20-C0780
Project: Central Valley
Feature: Coleman Fish Hatchery Weir

Date Time	y^3 of Conc	Percent Of Coarse Aggregate in each size Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard Pounds Water	Cem	Poz	Sand	C.A.	AD#3	Oz AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Fresh Concrete Tests Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	Compressive Strength Of Individual Specimens (psi) 3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
07/03/2012																													
10:22	9.50	52.4	100.0	0.0	0.0	0.0	243	593	104	1489	1323	0	7.2	27.8	20.6	0.0	8.8	81	3.50	139.0	0.35	6.4	5.0		3840	5160			
																									3930	5310			
Design		43.0	100.0	0.0	0.0	0.0	248	592	104	1226	1624	0	6.3	27.8	20.9	0.0			3.00	140.5	0.36	5.0	5.0			4500			
AVG.		52.4	100.0	0.0	0.0	0.0	243	593	104	1489	1323	0	7.2	27.8	20.6	0.0	8.8	81	3.50	139.0	0.35	6.4	5.0		3885	5235			

Bureau.....: Required average strength = 5569 psi at 28 days. Based on 90% exceeding the design strength of 4500 psi & C.O.V. (Est.) = 15.0
ACI.....: Required average strength = 5700 psi at 28 days (n=2)
CURE METHOD..: Water Tank with an Average Cure Temperature of 70 - 76 (F)

U.S. Bureau of Reclamation
SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Battle Creek

FEATURE: Hydropower Facility Mods Stage 1

SPECIFICATION NO: 20-CO746

SPECIFICATION REQUIREMENTS:
Min percent compaction (D-Value): 95.00 %
Min average D-Value for ALL tests: 95.00 %
Max DRY Wo-Wf: 2.00
Max WET Wo-Wf: -2.00

PERIOD OF REPORT: 07/01/2012 - 07/31/2012

FILL NAME: 2 - Structural Backfill

TEST NUMBER						LOCATION			FIELD DENSITY TESTS									LABORATORY VALUES					COMPACTION CONTROL VALUES						
														MINUS #4															
MONTH	DAY	SHIFT	NUMBER	TEST	STATUS	BORROW	STATION	OFFSET	ELEV	METH OF COMP	USBR TEST METH	WET DEN TOT MAT (PCF)	MOIS TOT MAT (%)	PLUS 3/4 (%)	SPEC GRAV +3/4	SPEC GRAV -3/4	DRY DEN (PCF)	MOIS CONT (%)	DEG OF SAT (%)	COMP TEST METH	COMP CYL (PCF)	MAX DRY DEN (PCF)	OPT MOIS CONT (%)	DEG OF SAT (%)	Wo-Wf (%)	C (%)	D (%)	PENE NEED (PSI)	VISUAL SOIL CLASS	OTHER TESTS	REMARKS
07-20-A-01-R-R						1	10+65	2'R	5	SF	7205	126.3	12.7	33.5	2.59	AV	98.1	17.3	66	R	128.9	110.8	18.0	95	0.7	89.3	88.5	NA	(GC)S	N	Failure
07-24-A-01-X-A*						1	10+71	CL	3	SF	7205	138.8	9.2	35.6	2.61	AV	114.3	12.3	71	R	121.6	117.1	15.3	96	3.0	105.6	97.6	NA	(GC)S	N	RE 07-20-12A1
ACCEPTED TESTS THIS PERIOD: 1											AVG.	138.8	9.2	35.6	2.61		114.3	12.3	71		121.6	117.1	15.3	96	3.0	105.6	97.6				

AV: Assumed Values used for Specific Gravity dependant calculations. +#4=2.75 -#4=2.68

U.S. Bureau of Reclamation
STATISTICAL SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Battle Creek

FEATURE: Hydropower Facility Mods Stage 1

SPECIFICATION NO: 20-CO746

FILL NAME: 2 - Structural Backfill

SPECIFICATION REQUIREMENTS:
Min percent compaction (D-Value): 95.00 %
Min average D-Value for ALL tests: 95.00 %
Max DRY Wo-Wf: 2.00
Max WET Wo-Wf: -2.00

PERIOD OF REPORT: 07/01/2012 - 07/31/2012

	This Period	To Date
No. of Tests Taken	2	38
No. of Tests Accepted	1	35
No. of Tests Rejected	1	3
No. of Rejected Tests not Re-Checked	0	2
Average Water Content Total Material	9.2	11.4
Average Control Fraction Water Content	12.3	14.9
Average Optimum Water Content	15.3	16.5
Average Wo-Wf	3.0	1.6
Percent of Accepted Tests Dryer Than 2.00	100.0	31.4
Percent of Accepted Tests Wetter Than -2.00	0.0	0.0
Average Wet Density Total Material (PCF)	138.8	134.8
Average Control Fraction Dry Density (PCF)	114.3	110.1
Average Proctor Max Dry Density (PCF)	117.1	111.4
Average Compaction Cylinder Wet Density (PCF)	121.6	125.7
Average Percent +3/4 Material (%)	35.6	30.7
Average C-Value (%)	105.6	100.5
Average D-Value (%)	97.6	98.8
Percent Accepted with D-Value < 95.0	0.0	11.4
Tests Accepted Outside of Specification Limits	1	15
Minimum D-Value of 95.0 %	0	4
Max DRY Wo-Wf of 2.00	1	11

U.S. Bureau of Reclamation
SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Battle Creek

FEATURE: Hydropower Facility Mods Stage 1

SPECIFICATION NO: 20-CO746
FILL NAME: 2 - Structural Backfill

SPECIFICATION REQUIREMENTS:
Min percent compaction (D-Value): 95.00 %
Min average D-Value for ALL tests: 95.00 %
Max DRY Wo-Wf: 2.00
Max WET Wo-Wf: -2.00

PERIOD OF REPORT: 06/01/2012 - 06/30/2012

TEST NUMBER							LOCATION			FIELD DENSITY TESTS										LABORATORY VALUES					COMPACTION CONTROL VALUES					
																MINUS #3/4														
MONTH	DAY	SHIFT	NUMBER	TYPE	STATUS	BORROW	STATION	OFFSET	ELEV	METH OF COMP	USBR TEST METH	WET DEN TOT MAT (PCF)	MOIS TOT MAT (%)	PLUS #4 (%)	SPEC GRAV +3/4	SPEC GRAV -3/4	DRY DEN (PCF)	MOIS CONT (%)	DEG OF SAT (%)	COMP TEST METH	COMP CYL (PCF)	MAX DRY DEN (PCF)	OPT MOIS CONT (%)	DEG OF SAT (%)	Wo-Wf (%)	C (%)	D (%)	PENE NEED (PSI)	VISUAL SOIL CLASS	OTHER TESTS	REMARKS
06-12-A-01-R-A						1	55+12	2.5L	1014	SF	7205	131.6	13.3	19.7	2.52	AV	109.8	15.7	80	R	122.4	107.3	17.3	83	1.6	103.8	102.3	NA	(SC)G	N	
06-13-A-01-R-A*						1	54+91	2'L	1014	SR	7205	135.6	12.5	26.6	2.49	AV	113.0	15.2	85	R	119.9	105.8	17.9	83	2.7	108.6	106.8	NA	(SC)G	N	
06-13-A-02-R-A						1	55+00	2.5R	1015	SF	7205	134.6	14.0	18.2	2.47	AV	113.3	15.8	89	R	124.8	107.9	15.5	76	-0.3	105.1	105.0	NA	(SC)G	N	
06-14-A-01-R-A*						1	54+96	2'R	1017	SF	7205	121.2	10.8	20.8	2.35	AV	103.8	12.0	53	R	118.1	107.3	16.0	77	4.0	98.4	96.7	NA	(SC)G	N	
06-15-A-01-R-A						1	54+98	6'L	1018	SF	7205	134.2	12.1	28.6	2.53	AV	110.2	15.6	81	R	126.9	109.8	15.2	78	-0.4	100.4	100.4	NA	(SC)G	N	
ACCEPTED TESTS THIS PERIOD: 5											AVG.	131.4	12.5	22.8	2.47		110.0	14.9	78		122.4	107.6	16.4	79	1.5	103.3	102.2				
											S.D.	5.9	1.2	4.6	0.07		3.8	1.6	14		3.6	1.4	1.2	3	1.9	4.0	4.0				
											C.O.V.	4.5	9.7	20.0	2.92		3.5	10.9	19		2.9	1.3	7.1	4	125.5	3.9	3.9				

AV: Assumed Values used for Specific Gravity dependant calculations. +#4=2.75 -#4=2.68

U.S. Bureau of Reclamation
STATISTICAL SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Battle Creek

FEATURE: Hydropower Facility Mods Stage 1

SPECIFICATION NO: 20-CO746

FILL NAME: 2 - Structural Backfill

SPECIFICATION REQUIREMENTS:
Min percent compaction (D-Value): 95.00 %
Min average D-Value for ALL tests: 95.00 %
Max DRY Wo-Wf: 2.00
Max WET Wo-Wf: -2.00

PERIOD OF REPORT: 06/01/2012 - 06/30/2012

	This Period	To Date
No. of Tests Taken	5	36
No. of Tests Accepted	5	34
No. of Tests Rejected	0	2
No. of Rejected Tests not Re-Checked	0	2
Average Water Content Total Material	12.5	11.5
Average Control Fraction Water Content	14.9	15.0
Average Optimum Water Content	16.4	16.5
Average Wo-Wf	1.5	1.6
Percent of Accepted Tests Dryer Than 2.00	40.0	29.4
Percent of Accepted Tests Wetter Than -2.00	0.0	0.0
Average Wet Density Total Material (PCF)	131.4	134.6
Average Control Fraction Dry Density (PCF)	110.0	110.0
Average Proctor Max Dry Density (PCF)	107.6	111.2
Average Compaction Cylinder Wet Density (PCF)	122.4	125.8
Average Percent +3/4 Material (%)	22.8	30.5
Average C-Value (%)	103.3	100.4
Average D-Value (%)	102.2	98.9
Percent Accepted with D-Value < 95.0	0.0	11.8
Tests Accepted Outside of Specification Limits	2	14
Minimum D-Value of 95.0 %	0	4
Max DRY Wo-Wf of 2.00	2	10

Concrete Construction Data

Concrete Class: Structural Concrete
Report of Mixes Used From 05/01/2012 to 06/30/2012

Mix Design Number: F670AFPX7
Specification Number: 20-C0746
Project: Battle Creek
Feature: Hydropower Facility Modifications Stage 1

		Percent Of Coarse Aggregate in each size					Yield Quantities per Cubic Yard Pounds						Oz						Fresh Concrete Tests					Compressive Strength Of Individual Specimens (psi)					
Date Time	y^3 of Conc	Sand	CA1	CA2	CA3	CA4	Water	Cem	Poz	Sand	C.A.	AD#3	AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
05/05/2012																													
06:28	36.00	46.8	100.0	0.0	0.0	0.0	244	534	101	1374	1529	0	12.0	18.8	24.9	0.0	6.7	68	3.50	140.1	0.38	5.5	4.7		2550	3640			
																									2580	3500			
05/11/2012																													
07:10	20.00	45.8	100.0	0.0	0.0	0.0	269	551	98	1391	1611	0	7.2	25.7	19.5	0.0	8.0	75	1.75	145.2	0.41	1.4	3.8		3340	4420			
																									3400	4390			
05/18/2012																													
05:06	14.00	44.3	100.0	0.0	0.0	0.0	214	544	96	1336	1643	0	6.7	25.6	19.2	0.0	8.8	66	3.00	141.9	0.33	5.5	4.7		3660	4810			
																									3540	4740			
11:44	22.50	44.3	100.0	0.0	0.0	0.0	230	551	104	1334	1640	0	7.4	25.5	19.2	0.0	7.1	77	1.25	142.9	0.35	4.2	4.8		2880	3860			
																									2870	3930			
Design		47.4	100.0	0.0	0.0	0.0	280	536	95	1357	1507	0	3.1	25.2	18.9	0.0			3.00	139.8	0.44	4.0	4.0			4000			
AVG.		45.3	100.0	0.0	0.0	0.0	239	545	100	1359	1606	0	8.3	23.9	20.7	0.0	7.6	72	2.38	142.5	0.37	4.1	4.5		3103	4161			
S.D.		1.2	0.0	0.0	0.0	0.0	23	8	4	28	53	0	2.5	3.4	2.8	0.0	0.9	5	1.05	2.1	0.04	1.9	0.5		436	497			
C.O.V		2.7	0.0	0.0	0.0	0.0	9.7	1.5	3.5	2.1	3.3	0.0	29.7	14.1	13.6	0.0	12.3	7.4	44.2	1.5	9.6	46.6	10.4		14.0	11.9			

Bureau.....: Required average strength = -8521 psi at 28 days. Based on 90% exceeding the design strength of 4000 psi & C.O.V. (n=52) = **.*
ACI.....: Required average strength = 17913 psi at 28 days (n=52)
CURE METHOD..: Water Tank with an Average Cure Temperature of 60 - 80 (F)

Concrete Construction Data

Concrete Class: Stuructural Concrete
Report of Mixes Used From 05/01/2012 to 06/30/2012

Mix Design Number: F670GFPW8
Specification Number: 20-C0746
Project: Battle Creek
Feature: Hydropower Facility Modifications Stage 1

Date Time	y^3 of Conc	Percent Of Coarse Aggregate in each size Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard Pounds Water	Cem	Poz	Sand	C.A.	AD#3	Oz AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Fresh Concrete Tests Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	Compressive Strength Of Individual Specimens (psi) 3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
05/04/2012																													
12:43	10.00	47.0	100.0	0.0	0.0	0.0	277	522	100	1394	1533	0	10.3	48.4	43.4	0.0	5.7	76	3.25	141.7	0.45	3.2	4.6		2320	2920			
																									2370	3040			
05/09/2012																													
06:25	16.50	46.2	100.0	0.0	0.0	0.0	260	522	95	1372	1561	0	8.8	49.1	24.8	0.0	7.8	73	3.25	141.1	0.42	4.2	5.7		3080	4030			
																									3130	4120			
05/11/2012																													
09:20	10.50	46.0	100.0	0.0	0.0	0.0	257	528	96	1383	1584	0	6.7	49.5	25.7	0.0	8.0	77	3.00	142.5	0.41	3.4	5.4		3150	4210			
																									3250	4230			
05/18/2012																													
06:33	15.00	44.6	100.0	0.0	0.0	0.0	226	526	93	1350	1637	0	6.7	49.4	24.7	0.0	8.5	66	3.50	141.9	0.37	5.0	5.5		3400	4530			
																									3520	4400			
05/24/2012																													
08:41	13.25	45.1	100.0	0.0	0.0	0.0	246	529	94	1362	1621	0	6.5	50.1	24.5	0.0	9.7	75	3.00	142.7	0.39	3.7	4.4		4030	5150			
																									3870	5090			
05/30/2012																													
06:13	16.00	46.0	100.0	0.0	0.0	0.0	275	517	91	1350	1550	0	6.1	48.5	30.3	0.0	7.5	75	3.25	140.1	0.45	4.2	5.6		3020	3820			
																									3080	3910			
05/31/2012																													
05:39	12.00	45.9	100.0	0.0	0.0	0.0	259	533	95	1389	1598	0	6.3	50.3	31.4	0.0	9.5	71	3.75	143.5	0.41	2.8	4.5		3960	5150			
																									3960	4950			
06/18/2012																													
09:08	4.75	46.1	100.0	0.0	0.0	0.0	250	519	96	1358	1549	0	5.0	49.7	30.3	0.0		85	3.00	139.7	0.41	5.3	4.6		4390	######			
																									3710	######			
Design		44.4	100.0	0.0	0.0	0.0	285	536	95	1267	1585	0	2.1	50.4	50.4	0.0			6.00	139.6	0.45	4.0	4.0			4000			
AVG.		45.9	100.0	0.0	0.0	0.0	256	525	95	1370	1579	0	7.1	49.4	29.4	0.0	8.1	75	3.25	141.7	0.41	4.0	5.0		3390	4254			
S.D.		0.7	0.0	0.0	0.0	0.0	16	5	3	17	37	0	1.7	0.7	6.3	0.0	1.3	5	0.27	1.3	0.03	0.9	0.6		581	708			
C.O.V		1.6	0.0	0.0	0.0	0.0	6.4	1.0	2.8	1.3	2.4	0.0	23.8	1.4	21.6	0.0	16.5	7.2	8.2	0.9	6.7	21.7	11.1		17.1	16.6			

Bureau.....: Required average strength = 4755 psi at 28 days. Based on 90% exceeding the design strength of 4000 psi & C.O.V. (n=39) = 12.4
ACI.....: Required average strength = 4752 psi at 28 days (n=39)
CURE METHOD..: Water Tank with an Average Cure Temperature of 70 - 76 (F)

= Specimen not broken as of report date.

U.S. Bureau of Reclamation

Aggregate Gradation Summary

From 06/01/2012 to 06/30/2012

Specification : 20-C0746
Mix Number : ALL Combined for This Specification
Project : Battle Creek
Feature : Hydropower Facility Modifications Stage 1

Sand Gradations (ASTM)

	Percent Passing											
Date	No. 3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	% -200	FINE MOD	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	100.0	85.0	60.0	30.0	10.0					
Spec Min %	100.0	95.0	80.0	50.0	25.0	10.0	2.0					
06/18/2012	100.0	99.8	81.4	56.7	33.9	16.4	6.3	3.40	3.06	1.00	2.60	2.20
Average	100.0	99.8	81.4	56.7	33.9	16.4	6.3	3.40	3.06	1.00	2.60	2.20
S.D.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
C.O.V.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00

U.S. Bureau of Reclamation

Aggregate Gradation Summary

From 06/01/2012 to 06/30/2012

Specification : 20-C0746
Mix Number : ALL Combined for This Specification
Project : Battle Creek
Feature : Hydropower Facility Modifications Stage 1

Nominal Size : #4 - 1" (ASTM)

Coarse Aggregate Gradations

	Percent Passing Screen Sizes in Inches or Sieve Size Shown								
Date	1 1/2"	1"	1/2"	#4	#8	% -200	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	60.0	10.0	5.0				
Spec Min %	100.0	95.0	25.0	0.0	0.0				
06/18/2012	100.0	98.0	26.3	1.2	0.9	0.20	1.00	2.54	2.40
Average	100.0	98.0	26.3	1.2	0.9	0.20	1.00	2.54	2.40
S.D.	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
C.O.V.	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00

U.S. Bureau of Reclamation

Concrete Construction Data

Concrete Class: Lean Concrete Fill
Report of Mixes Used From 06/01/2012 to 06/28/2012

Mix Design Number: 1529207
Specification Number: 20-C0754
Project: MIAD Key-Block
Feature: Lean Concrete

Date 1 Time Year	(psi) y^3 of Conc	Percent Of Coarse Aggregate: Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard, Pounds: Water	Cem	Poz	Sand	C.A.	Oz: AD#3	AEA	WRA	AD#4	AD#5	Cem Eff	T E M P	Fresh Concrete Tests: Slump (ins)	UW (pcf)	W/ C+P	Air: Grav Meth	Press Meter	Compressive Strength Of Individual Specimens: 3 Day	7 Day	28 Day	90 Day	180 Day
06/28/2012																												
08:52	566.00	73.0	100.0	0.0	0.0	0.0	467	398	101	2039	758	0	0.0	0.0	0.0	0.0		72	7.50	139.4	0.94	0.7	0.4		######	######		
																									######	######		
10:35	566.00	73.1	100.0	0.0	0.0	0.0	473	402	103	2068	763	0	0.0	0.0	0.0	0.0		77	7.00	141.1	0.94	0.6	0.7		######	######	######	
																									######	######	######	
12:41	568.00	73.0	100.0	0.0	0.0	0.0	470	401	100	2047	760	0	0.0	0.0	0.0	0.0		78	6.75	139.9	0.94	0.2	0.6		######	######		
																									######	######		
Design		45.0	100.0	0.0	0.0	0.0	475	399	101	1257	1542	0	0.0	0.0	0.0	0.0			8.00	139.8	0.95	0.4	0.4			1000		
AVG.		73.0	100.0	0.0	0.0	0.0	470	400	101	2051	760	0	0.0	0.0	0.0	0.0	0.0	76	7.08	140.1	0.94	0.1	0.6					
S.D.		0.1	0.0	0.0	0.0	0.0	3	2	2	15	3	0	0.0	0.0	0.0	0.0	0.0	3	0.38	0.9	0.00	0.7	0.2					
C.O.V		0.1	0.0	0.0	0.0	0.0	0.6	0.5	1.5	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	4.3	5.4	0.6	0.1	**.*	27.0					

Bureau.....: Required average strength = 1238 psi at 28 days. Based on 90% exceeding the design strength of 1000 psi & C.O.V. (Est.) = 15.0
ACI.....: Required average strength = 2000 psi at 28 days (n=2)
CURE METHOD..: Fog with an Average Cure Temperature of 65 - 85 (F)

= Specimen not broken as of report date.

U.S. Bureau of Reclamation
Aggregate Gradation Summary

From 7/01/2012 to 08/01/2012

Specification : 20-C0754
Mix Number : 1534982
Project : MIAD Key-Block
Feature : MIAD Key-Block Lean Concrete

Nominal Size : 1" (ASTM)

Combined Aggregate Gradations

	Percent Passing Screen Sizes in Inches or Sieve Size Shown								
Date	1 1/2"	1"	1/2"	#4	#8	% -200	Moist %	Spec Grav	Absorp
Spec Max %		100.0		50.0		10			
Spec Min %		100.0		0.0		0			
02/16/2012		100.0		45.9		8.1	N/A	2.72	1.00
02/23/2012		100.0		43.5		7.7	3.15	2.72	1.00
03/02/2012		100.0		42.9		6.6	5.5	2.72	1.00
03/05/2012		100.0		47.2		7.9	N/A	2.72	1.00
03/09/2012		100.0		48.3		7.8	5.5	2.72	1.00
03/21/2012		100.0		46.6		7.9	5.0	2.72	1.00
06/28/2012		100.0		50.8		9.5	N/A	2.72	1.00
07/10/2012		100.0		46.4		8.5	N/A	2.72	1.00
07/12/2012		100.0		44.8		8.3	N/A	2.72	1.00
07/17/2012		100.0		43.3		8.1	N/A	2.72	1.00
07/19/2012		100.0		45.2		8.3	N/A	2.72	1.00
07/24/2012		100.0		47.7		9.2	N/A	2.72	1.00
07/26/2012		100.0		44.2		7.9	N/A	2.72	1.00
07/31/2012		100.0		44.3		8.1	N/A	2.72	1.00
Average		100.0		45.8		8.1	3.80	2.72	1.00

U.S. Bureau of Reclamation
Aggregate Gradation Summary

From 06/01/2012 to 06/03/2012

Specification : 20-C0754
Mix Number : 1534982
Project : MIAD Key-Block
Feature : MIAD Key-Block Lean Concrete

Nominal Size : 1" (ASTM)

Combined Aggregate Gradations

	Percent Passing Screen Sizes in Inches or Sieve Size Shown								
Date	1 1/2"	1"	1/2"	#4	#8	% -200	Moist %	Spec Grav	Absorp
Spec Max %		100.0		50.0		10			
Spec Min %		100.0		0.0		0			
02/16/2012		100.0		45.9		8.1	N/A	2.72	1.00
02/23/2012		100.0		43.5		7.7	3.15		
03/02/2012		100.0		42.9		6.6	5.5	2.72	1.00
03/05/2012		100.0		47.2		7.9	N/A	2.72	1.00
03/09/2012		100.0		48.3		7.8	5.5	2.72	1.00
03/21/2012		100.0		46.6		7.9	5.0	2.72	1.00
06/28/2012		100.0		50.8		9.5	N/A	2.72	1.00
Average		100.0		46.5		7.9	3.80	2.72	1.00

U.S. Bureau of Reclamation
SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Central Valley SPECIFICATION REQUIREMENTS: PERIOD OF REPORT: 07/01/2012 - 07/31/2012

FEATURE: MIAD Key-Block

SPECIFICATION NO: 20-C0754

FILL NAME: 1 - Key Block

TEST NUMBER							LOCATION			FIELD DENSITY TESTS									LABORATORY VALUES					COMPACTION CONTROL VALUES						
															MINUS #4															
MONTH	DAY	SHIFT	NUMBER	STATUS	BORROW		STATION	OFF SET	ELEV	METH OF COMP	USBR TEST METH	WET DEN TOT MAT (PCF)	MOIS TOT MAT (%)	PLUS #4 (%)	SPEC GRAV +4	SPEC GRAV -4	DRY DEN (PCF)	MOIS CONT (%)	DEG OF SAT (%)	COMP TEST METH	COMP CYL (PCF)	MAX DRY DEN (PCF)	OPT MOIS CONT (%)	DEG OF SAT (%)	Wo-Wf (%)	C (%)	D (%)	PENE NEED (PSI)	VISUAL SOIL CLASS	OTHER TESTS	REMARKS
07-26-A-01-R-A					3		Cell+0E	CL	345	VR	7205	148.5	4.8	27.2	2.71	2.71	134.0	6.2	64	R	131.7	128.7	9.8	85	3.6	108.1	104.1	NA	SM	N	11'SON 41 EOW
07-26-A-02-R-A					3		Cell+0E	CL	345	VR	7205	147.6	4.8	27.1	2.57	2.71	135.3	6.1	66	R	131.5	127.5	9.3	77	3.2	109.2	106.1	NA	SM	N	10'NOS 10'EOW
07-26-A-03-R-A					3		Cell+0E	CL	347	VR	7205	144.7	5.9	25.5	2.70	2.71	128.3	7.5	64	R	135.2	130.0	9.5	86	2.0	102.0	98.7	NA	SM	N	15 SON 39 WOE
07-26-A-04-R-A					3		Cell+0E	CL	347	VR	7205	145.8	5.5	25.8	2.72	2.71	129.9	7.2	65	R	134.1	128.6	9.7	84	2.5	103.8	101.0	NA	SM	N	20' NOS 62 WOE
07-27-A-01-R-A					3		Cell+0E	CL	349	VR	7205	145.2	5.3	24.5	2.70	2.71	130.6	6.7	62	R	133.5	129.6	9.4	84	2.7	104.4	100.8	NA	SM	N	17' NOS 47'WOE
07-27-A-02-R-A					3		Cell+0E	CL	349	VR	7205	0.0	5.4	27.8	2.71	2.71	126.3	7.0	56	R	132.3	129.3	9.6	85	2.6	102.1	97.7	NA	SM	N	6' NOS 21' EOW
07-30-A-01-R-A					3		Cell+0E	CL	351	VR	7205	141.5	4.9	25.1	2.71	2.71	127.2	6.3	52	R	131.3	127.3	9.0	74	2.7	103.0	99.9	NA	SM	N	7' EOW 6.5'SON
07-30-A-02-R-A					3		Cell+0E	CL	350	VR	7205	147.8	5.0	29.0	2.71	2.71	132.5	6.8	67	R	132.5	127.8	9.1	76	2.3	106.8	103.7	NA	SM	N	21' EOW 8' NOS
ACCEPTED TESTS THIS PERIOD: 10											AVG.	131.0	5.1	26.3	2.70	2.71	130.5	6.6	61		132.4	128.1	9.4	80	2.9	105.0	101.8				
											S.D.	46.1	0.4	1.5	0.05	0.00	3.3	0.5	6		1.5	1.3	0.3	4	0.5	2.6	2.9				
											C.O.V.	35.2	7.4	5.6	1.68	0.00	2.5	7.8	10		1.1	1.0	2.7	6	19.1	2.5	2.8				

U.S. Bureau of Reclamation
STATISTICAL SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Central Valley

SPECIFICATION REQUIREMENTS:

PERIOD OF REPORT: 07/01/2012 - 07/31/2012

FEATURE: MIAD Key-Block

SPECIFICATION NO: 20-C0754

FILL NAME: 1 - Key Block

	This Period	To Date
No. of Tests Taken	8	45
No. of Tests Accepted	8	44
No. of Tests Rejected	0	1
No. of Rejected Tests not Re-Checked	0	0
Average Water Content Total Material	5.1	6.6
Average Control Fraction Water Content	6.6	8.5
Average Optimum Water Content	9.4	9.3
Average Wo-Wf	2.9	0.8
Average Wet Density Total Material (PCF)	131.0	140.2
Average Control Fraction Dry Density (PCF)	130.5	129.5
Average Proctor Max Dry Density (PCF)	128.1	128.5
Average Compaction Cylinder Wet Density (PCF)	132.4	137.9
Average Percent +#4 Material (%)	26.3	26.6
Average C-Value (%)	105.0	102.0
Average D-Value (%)	101.8	100.8
Percent Accepted with D-Value < 0.0	0.0	0.0

U.S. Bureau of Reclamation
Concrete Construction Data

Concrete Class: Lean Concrete Fill
Report of Mixes Used From 06/28/2012 to 07/31/2012

Mix Design Number: 1529207
Specification Number: 20-C0754
Project: MIAD Key-Block
Feature: Lean Concrete

Date Time	y^3 of Conc	Percent Of Coarse Aggregate in each size Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard Pounds Water	Cem	Poz	Sand	C.A.	AD#3	Oz AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Fresh Concrete Tests Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	Compressive Strength Of Individual Specimens (psi) 3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
06/28/2012																													
08:52	566.00	73.0	100.0	0.0	0.0	0.0	467	398	101	2039	758	0	0.0	0.0	0.0	0.0	3.4	72	7.50	139.4	0.94	0.7	0.4		790	1330			
																									770	1360			
10:35	566.00	73.1	100.0	0.0	0.0	0.0	473	402	103	2068	763	0	0.0	0.0	0.0	0.0	3.5	77	7.00	141.1	0.94	-0.6	0.7		870	1370	######		
																									900	1470	######		
12:41	568.00	73.0	100.0	0.0	0.0	0.0	470	401	100	2047	760	0	0.0	0.0	0.0	0.0	3.4	78	6.75	139.9	0.94	0.2	0.6		790	1310			
																									770	1390			
07/10/2012																													
09:35	973.33	70.4	100.0	0.0	0.0	0.0	471	402	102	1987	834	0	0.0	0.0	0.0	0.0		77	6.50	140.6	0.93	-0.5	0.6		800	######			
																									840	######			
12:08	973.33	70.5	100.0	0.0	0.0	0.0	474	405	102	1994	835	0	0.0	0.0	0.0	0.0		80	7.00	141.1	0.93	-0.9	0.4		770	######	######		
																									750	######	######		
14:12	973.33	70.4	100.0	0.0	0.0	0.0	466	399	100	1972	829	0	0.0	0.0	0.0	0.0		78	6.50	139.5	0.93	0.3	0.4		800	######			
																									790	######			
07/12/2012																													
08:54	602.00	69.5	100.0	0.0	0.0	0.0	471	403	103	1965	862	0	0.0	0.0	0.0	0.0		76	6.50	140.9	0.93	-0.6	0.4		850	######			
																									900	######			
10:39	602.00	69.5	100.0	0.0	0.0	0.0	472	403	104	1968	863	0	0.0	0.0	0.0	0.0		74	6.75	141.1	0.93	-0.8	0.4		830	######	######		
																									820	######	######		
12:40	602.00	69.6	100.0	0.0	0.0	0.0	469	401	100	1960	855	0	0.0	0.0	0.0	0.0		78	6.75	140.2	0.94	-0.2	0.5		820	######			
																									800	######			
14:30	602.00	69.6	100.0	0.0	0.0	0.0	472	403	102	1965	860	0	0.0	0.0	0.0	0.0		80	6.50	140.8	0.93	-0.7	0.6				######		
																											######		
16:09	602.00	69.6	100.0	0.0	0.0	0.0	472	403	101	1965	858	0	0.0	0.0	0.0	0.0		82	6.50	140.7	0.94	-0.7	0.6				######		
																											######		
07/17/2012																													
06:47	566.00	68.9	100.0	0.0	0.0	0.0	467	398	103	1923	872	0	0.0	0.0	0.0	0.0		67	6.50	139.4	0.93	0.8	0.5		840	######			
																									820	######			
09:05	566.00	69.0	100.0	0.0	0.0	0.0	477	407	103	1971	891	0	0.0	0.0	0.0	0.0		69	5.50	142.6	0.94	-1.5	0.5		910	######	######		
																									930	######	######		
11:42	566.00	68.8	100.0	0.0	0.0	0.0	467	403	101	1924	874	0	0.0	0.0	0.0	0.0		73	6.50	139.6	0.93	0.6	0.5		890	######			
																									870	######			
14:27	566.00	68.9	100.0	0.0	0.0	0.0	471	405	101	1948	887	0	0.0	0.0	0.0	0.0		73	6.50	141.2	0.93	-0.6	0.4				######		
																											######		
15:22	566.00	69.0	100.0	0.0	0.0	0.0	469	400	101	1930	875	0	0.0	0.0	0.0	0.0		74	6.75	139.8	0.94	0.2	0.5				######		
																											######		
07/19/2012																													
06:35	450.00	69.8	100.0	0.0	0.0	0.0	472	402	103	1969	851	0	0.0	0.0	0.0	0.0		67	6.75	140.6	0.93	-0.4	0.5		870	######			
																									870	######			
08:39	450.00	69.8	100.0	0.0	0.0	0.0	469	400	101	1957	847	0	0.0	0.0	0.0	0.0		72	6.00	139.8	0.94	0.1	0.4		840	######	######		
																									860	######	######		
11:26	450.00	69.8	100.0	0.0	0.0	0.0	470	402	101	1960	848	0	0.0	0.0	0.0	0.0		73	8.00	140.0	0.93	-0.1	0.6		900	######			
																									890	######			
13:25	450.00	69.8	100.0	0.0	0.0	0.0	468	400	100	1954	844	0	0.0	0.0	0.0	0.0		76	6.75	139.5	0.94	0.3	0.5				######		

																										######
13:56	450.00	69.8	100.0	0.0	0.0	0.0	474	404	105	1974	854	0	0.0	0.0	0.0	0.0	76	6.00	141.1	0.93	-0.9	0.5				######
																										######
07/24/2012																										
07:00	645.00	69.8	100.0	0.0	0.0	0.0	472	403	103	1969	852	0	0.0	0.0	0.0	0.0	71	7.75	140.7	0.93	-0.5	0.4		810	######	######
																								850	######	######
09:23	645.00	69.9	100.0	0.0	0.0	0.0	471	401	106	1964	846	0	0.0	0.0	0.0	0.0	73	7.00	140.3	0.93	-0.3	0.5		900	######	######
																								920	######	######
07/26/2012																										
06:32	464.00	69.3	100.0	0.0	0.0	0.0	470	401	103	1949	865	0	0.0	0.0	0.0	0.0	67	6.00	140.3	0.93	0.1	0.6		1000	######	
																								950	######	
08:20	464.00	69.2	100.0	0.0	0.0	0.0	466	398	101	1940	865	0	0.0	0.0	0.0	0.0	71	6.00	139.6	0.93	0.6	0.4		850	######	######
																								860	######	######
10:02	464.00	69.3	100.0	0.0	0.0	0.0	472	403	101	1958	867	0	0.0	0.0	0.0	0.0	74	6.00	140.8	0.94	-0.4	0.6		900	######	
																								900	######	

Concrete Construction Data

Concrete Class: Lean Concrete Fill
Report of Mixes Used From 06/28/2012 to 07/31/2012

Mix Design Number: 1529207
Specification Number: 20-C0754
Project: MIAD Key-Block
Feature: Lean Concrete

Date Time	y^3 of Conc	Percent Of Coarse Aggregate in each size Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard Pounds Water	Cem	Poz	Sand	C.A.	Oz AD#3	AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Fresh Concrete Tests Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	Compressive Strength Of Individual Specimens (psi) 3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
07/26/2012																													
11:32	464.00	69.4	100.0	0.0	0.0	0.0	467	399	100	1942	858	0	0.0	0.0	0.0	0.0		76	6.00	139.5	0.94	0.6	0.5				######		
																											######		
13:08	464.00	69.2	100.0	0.0	0.0	0.0	468	400	100	1940	864	0	0.0	0.0	0.0	0.0		76	6.00	139.7	0.94	0.4	0.4				######		
																											######		
07/31/2012																													
09:31	680.00	69.2	100.0	0.0	0.0	0.0	473	403	102	1947	868	0	0.0	0.0	0.0	0.0		73	5.75	140.5	0.94	-0.2	0.3	######	######	######			
																								######	######	######			
12:28	680.00	69.4	100.0	0.0	0.0	0.0	469	399	102	1951	862	0	0.0	0.0	0.0	0.0		78	6.25	140.1	0.94	0.1	0.3	######	######	######			
																								######	######	######			
Design		45.0	100.0	0.0	0.0	0.0	475	399	101	1257	1542	0	0.0	0.0	0.0	0.0			8.00	139.8	0.95	0.4	0.4			1000			
AVG.		69.9	100.0	0.0	0.0	0.0	470	402	102	1967	849	0	0.0	0.0	0.0	0.0	3.4	74	6.54	140.3	0.93	-0.2	0.5	852		1372			
S.D.		1.2	0.0	0.0	0.0	0.0	3	2	2	33	33	0	0.0	0.0	0.0	0.0	0.1	4	0.57	0.7	0.00	0.6	0.1	55		56			
C.O.V		1.7	0.0	0.0	0.0	0.0	0.6	0.6	1.5	1.7	3.9	0.0	0.0	0.0	0.0	0.0	2.7	5.2	8.6	0.5	0.3	**.*	20.4	6.5		4.1			

Bureau.....: Required average strength = 1238 psi at 28 days. Based on 90% exceeding the design strength of 1000 psi & C.O.V. (Est.) = 15.0
ACI.....: Required average strength = 2000 psi at 28 days (n=8)
CURE METHOD..: Water Tank with an Average Cure Temperature of 78 - 83 (F)

= Specimen not broken as of report date.

U.S. Bureau of Reclamation
Aggregate Gradation Summary

From 06/01/2012 to 06/30/2012

Specification : 20-C0752
Mix Number : ALL Combined for This Specification
Project : Central Valley
Feature : Red Bluff Pumping Plant and Fish Screen

Sand Gradations (ASTM)

	Percent Passing											
Date	No. 3/8"	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	% -200	FINE MOD	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	100.0	85.0	60.0	30.0	10.0					
Spec Min %	100.0	95.0	80.0	50.0	25.0	10.0	2.0					
06/06/2012	100.0	99.8	81.4	57.0	33.8	16.1	6.0	3.00	3.06	3.00	2.60	2.20
Average	100.0	99.8	81.4	57.0	33.8	16.1	6.0	3.00	3.06	3.00	2.60	2.20
S.D.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
C.O.V.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00

Aggregate Gradation Summary

From 06/01/2012 to 06/30/2012

Specification : 20-C0752
Mix Number : ALL Combined for This Specification
Project : Central Valley
Feature : Red Bluff Pumping Plant and Fish Screen

Nominal Size : #4 - 1 1/2" (ASTM)

Coarse Aggregate Gradations

	Percent Passing Screen Sizes in Inches or Sieve Size Shown								
Date	2"	1 1/2"	3/4"	3/8"	#4	% -200	Moist %	Spec Grav	Absorp
Spec Max %	100.0	100.0	70.0	30.0	5.0				
Spec Min %	100.0	95.0	35.0	10.0	0.0				
06/06/2012	100.0	95.7	57.7	23.9	4.0	0.40	1.00	2.58	2.10
Average	100.0	95.7	57.7	23.9	4.0	0.40	1.00	2.58	2.10
S.D.	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
C.O.V.	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00

U.S. Bureau of Reclamation
SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Central Valley

FEATURE: Red Bluff Pumping Plant and Fish Screen

SPECIFICATION NO: 20-C0740

SPECIFICATION REQUIREMENTS:
Min percent compaction (D-Value): 98.00 %
Min average D-Value for ALL tests: 98.00 %
Max DRY Wo-Wf: 2.00
Max WET Wo-Wf: -2.00

PERIOD OF REPORT: 06/01/2012 - 06/30/2012

FILL NAME: 1 - Road Embankment

TEST NUMBER		LOCATION			FIELD DENSITY TESTS									LABORATORY VALUES					COMPACTION CONTROL VALUES						
											MINUS #4														
MONTH	DAY	SHIFT	NUMBER	TYPE	STATUS	BORROW	STATION	OFFSET	ELEV	METH OF COMP	ASTM TEST METH	WET DEN TOT MAT (PCF)	MOIS TOT MAT (%)	PLUS #3/4 (%)	SPEC GRAV +3/4	SPEC GRAV -3/4	DRY DEN (PCF)	MOIS CONT (%)	DEG OF SAT (%)	COMP TEST METH	COMP CYL (PCF)	MAX DRY DEN (PCF)	OPT MOIS CONT (%)	DEG OF SAT (%)	Wo-Wf (%)	C (%)	D (%)	PENE NEED (PSI)	VISUAL SOIL CLASS	OTHER TESTS	REMARKS
06	01	A	01	R	A*	1	49+50	A-3	0	SR	7205	133.3	4.0	15.4	2.70	2.60	122.8	4.6	37	R	122.6	123.9	9.8	82	5.2	104.8	99.1	NA		N	
06	05	A	01	R	A*	1	40+50	A-3	0	SR	7205	137.4	5.2	10.0	2.64	2.60	127.8	5.7	55	R	123.3	123.6	9.0	75	3.3	109.6	103.4	NA		N	
06	05	A	02	R	R	1	00+00	CL	0	SR	7205	138.7	3.6	34.0	2.63	2.60	122.5	5.1	41	R	124.5	127.4	11.4	108	6.3	103.4	96.2	NA		N	
06	11	A	02	R	A*	1	00+00	CL	0	SR	7205	140.7	7.5	12.9	2.64	2.60	127.2	8.5	80	R	126.0	119.6	12.3	90	3.8	109.5	106.4	NA		N	
ACCEPTED TESTS THIS PERIOD: 3											AVG.	137.1	5.6	12.8	2.66	2.60	125.9	6.3	57		124.0	122.4	10.4	82	4.1	108.0	103.0				
											S.D.	3.7	1.8	2.7	0.03	0.00	2.7	2.0	22		1.8	2.4	1.7	7	1.0	2.7	3.7				
											C.O.V.	2.7	32.0	21.2	1.30	0.00	2.2	32.1	38		1.4	2.0	16.6	9	24.0	2.5	3.6				

U.S. Bureau of Reclamation
STATISTICAL SUMMARY OF FIELD AND LABORATORY TESTS OF COMPACTED FILL
CONTROLLED BY THE LABORATORY COMPACTION METHOD

PROJECT: Central Valley

FEATURE: Red Bluff Pumping Plant and Fish Screen

SPECIFICATION NO: 20-C0740

FILL NAME: 1 - Road Embankment

SPECIFICATION REQUIREMENTS:
Min percent compaction (D-Value): 98.00 %
Min average D-Value for ALL tests: 98.00 %
Max DRY Wo-Wf: 2.00
Max WET Wo-Wf: -2.00

PERIOD OF REPORT: 06/01/2012 - 06/30/2012

	This Period	To Date
No. of Tests Taken	4	130
No. of Tests Accepted	3	92
No. of Tests Rejected	1	38
No. of Rejected Tests not Re-Checked	1	37
Average Water Content Total Material	5.6	9.6
Average Control Fraction Water Content	6.3	10.6
Average Optimum Water Content	10.4	12.2
Average Wo-Wf	4.1	1.6
Percent of Accepted Tests Dryer Than 2.00	100.0	48.9
Percent of Accepted Tests Wetter Than -2.00	0.0	9.8
Average Wet Density Total Material (PCF)	137.1	137.6
Average Control Fraction Dry Density (PCF)	125.9	120.4
Average Proctor Max Dry Density (PCF)	122.4	120.4
Average Compaction Cylinder Wet Density (PCF)	124.0	128.6
Average Percent +3/4 Material (%)	12.8	14.9
Average C-Value (%)	108.0	102.0
Average D-Value (%)	103.0	98.9
Percent Accepted with D-Value < 98.0	0.0	25.0
Tests Accepted Outside of Specification Limits	3	62
Minimum D-Value of 98.0 %	0	23
Max DRY Wo-Wf of 2.00	3	45
Max WET Wo-Wf of -2.00	0	9

Concrete Construction Data

Concrete Class: Fish Screen Slab
Report of Mixes Used From 06/01/2012 to 06/30/2012

Mix Design Number: F740QFPX7-2
Specification Number: 20-C0752
Project: Central Valley
Feature: Red Bluff Pumping Plant and Fish Screen

Date Time	y^3 of Conc	Percent Of Coarse Aggregate in each size Sand	CA1	CA2	CA3	CA4	Yield Quantities per Cubic Yard Pounds Water	Cem	Poz	Sand	C.A.	AD#3	Oz AEA	WRA	AD#4	AD#5	Cem Eff	TEMP	Fresh Concrete Tests Slump (ins)	UW (pcf)	W/C+P	Air Grav Meth	Air Press Meter	Compressive Strength Of Individual Specimens (psi) 3 Day	7 Day	28 Day	90 Day	180 Day	1 Year
06/01/2012																													
09:00	8.00	52.6	100.0	0.0	0.0	0.0	245	603	104	1508	1347	0	6.2	21.3	28.4	0.0	6.7	76	4.50	141.0	0.35	5.5	4.8		2890	4010			
																									2930	4010			
06/06/2012																													
12:02	7.00	56.1	100.0	0.0	0.0	0.0	251	594	107	1593	1237	0	6.2	20.7	27.6	0.0		78	3.50	140.1	0.36	5.8	5.7		2600	######			
																									2800	######			
06/07/2012																													
11:00	6.00	56.1	100.0	0.0	0.0	0.0	241	607	113	1633	1269	0	5.7	21.9	28.8	0.0		79	2.50	143.1	0.33	4.3	3.8		3700	######			
																									3540	######			
06/13/2012																													
06:04	8.00	56.0	100.0	0.0	0.0	0.0	229	619	108	1638	1276	0	5.7	21.8	28.0	0.0		70	3.50	143.3	0.31	4.8	3.8		3310	######			
																									3170	######			
06/14/2012																													
06:10	4.50	56.3	100.0	0.0	0.0	0.0	233	619	105	1632	1258	0	5.5	21.1	27.6	0.0		70	3.50	142.5	0.32	5.2	4.0		3480	######			
																									3060	######			
Design		44.0	100.0	0.0	0.0	0.0	237	592	105	1254	1624	0	4.5	27.8	20.9	0.0			3.00	141.2	0.34	5.0	5.0			4000			
AVG.		55.4	100.0	0.0	0.0	0.0	240	608	107	1601	1277	0	5.8	21.3	28.1	0.0	6.7	75	3.50	142.0	0.34	5.1	4.4		3148	4010			
S.D.		1.6	0.0	0.0	0.0	0.0	9	11	4	55	42	0	0.3	0.5	0.5	0.0	0.0	4	0.71	1.4	0.02	0.6	0.8		356	0			
C.O.V		2.8	0.0	0.0	0.0	0.0	3.7	1.8	3.3	3.4	3.3	0.0	5.6	2.4	1.8	0.0	0.0	5.8	20.2	1.0	5.2	11.6	18.7		11.3	0.0			

Bureau.....: Required average strength = 4605 psi at 28 days. Based on 90% exceeding the design strength of 4000 psi & C.O.V. (n=245) = 10.3
ACI.....: Required average strength = 4813 psi at 28 days (n=245)
CURE METHOD..: Water Tank with an Average Cure Temperature of 70 - 76 (F)

= Specimen not broken as of report date.