



MECHANICAL DATA SHEET: VESSEL

PLANT ITEM No.

R10505710

24590-LAW-MV-LCP-VSL-00002

| | | | |
|--------------|--|---------------------|---|
| Project | RPP-WTP | P&ID. | 24590-LAW-M6-LCP-P0002 |
| Project No | 24590 | Process Data Sheet: | Deleted ¹ 3/7/05 |
| Project Site | Hanford | Vessel Drawing | 24590-LAW-MV-LCP-P0002 |
| Description: | LAW Concentrate Receipt Vessel ¹ | | |

Reference Data

| | |
|---|------------------------------------|
| Charge Vessels (Tag Numbers) | Not Applicable |
| Pulsejet Mixers / Agitators (Tag Numbers) | Not Applicable ¹ |
| RFDs/Pumps (Tag Numbers) | Not Applicable ¹ |

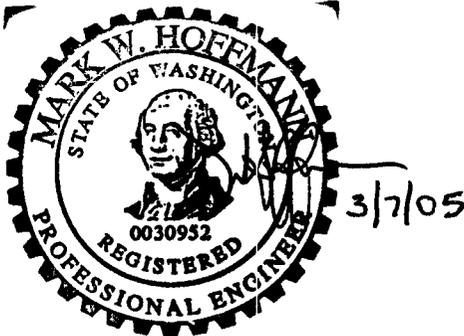
Design Data

| | | | | | | |
|--------------------------|-----------------------------|---------------|-------------------|---|----------------|----------------|
| Quality Level | CM (Note 3) | | Fabrication Specs | 24590-WTP-3PS-MV00-TP001 (PVDF) ¹ | | |
| Seismic Category | SC-III | | Design Code | ASME VIII Div 1 | | |
| Service/Contents | LAW Concentrate Feed | | Code Stamp | Yes | | |
| Design Specific Gravity | 1.47 | | NB Registration | Yes | | |
| Maximum Operating Volume | gal | 15,435 | Weights (lbs) | Empty | Operating | Test |
| Total Volume | gal | 18,130 | Estimated | 49,200 | 235,700 | 199,900 |
| | | | Actual * | | | |

| | | | | | | | |
|-------------------------|------|--------------------------|---------------|--------------------|-----------------------------|--|-------------|
| Inside Diameter | inch | 168 | | | Wind Design | Not Required | |
| Length/Height (TL-TL) | inch | 153 | | | Snow Design | Not Required | |
| | | Vessel Operating | Vessel Design | Coil/Jacket Design | Seismic Design | 24590-WTP-3PS-MV00-TP002 24590-WTP-3PS-FB01-T0001 | |
| Internal Pressure | psig | 0.07 | 15 | None | Seismic Base Moment * | ft*lb | |
| External Pressure | psig | 4.09 ¹ | FV | None | Postweld Heat Treat | Not Required | |
| Temperature | °F | 122 | 150 | None | Corrosion Allowance | Inch | 0.04 |
| Min. Design Metal Temp. | °F | 40 | | | Hydrostatic Test Pressure * | psig | |

Note: Please note that source, special nuclear and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA), are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts, that pursuant to the AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.

ISSUED BY
RPP-WTP PDC



EXPIRES 12/10/06

This bound document contains a total of 3 sheets.

| | | | | | | |
|------|---------------------------|--------------------|--------------------|--------------------|--------------------|---------------|
| 1 | Issued for Permitting Use | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | 3/7/05 |
| 0 | Issued for Permitting Use | J. Jackson | S. Lee | C. Slater | B. Usen | 12/29/03 |
| Rev. | Reason for Revision | By | Checked | Review | Approved | Date |



MECHANICAL DATA SHEET: VESSEL

PLANT ITEM No.

24590-LAW-MV-LCP-VSL-00002

Materials of Construction

| Component | Material | Minimum Thickness / Size | Containment |
|-------------------------------|--|--------------------------|----------------------------|
| Top Head | SA-240 316 (Note 1) | See Drawing | Auxiliary |
| Shell | SA-240 316 (Note 1) | See Drawing | Primary |
| Bottom Head | SA-240 316 (Note 1) | See Drawing | Primary |
| Support | SA-240 304 (Note 1) | See Drawing | NIA |
| Jacket/Coils/Half-Pipe Jacket | NA | NIA ¹ | NIA |
| Internals | SA-240 316/SA-312 TP316 (Note 1) | See Drawing | Thermowells Primary |
| Pipe | SA-312 TP316 Seamless (Note 1) | See Drawing | Note 2 |
| Forgings/ Bar stock | SA-182 F316 (Note 1) | See Drawing | NIA |
| Gaskets (O Ring) | EPDM ¹ | NIA | NIA |
| Bolting | SA-193 Gr. B8M / SA-194 Gr. 8M ¹ | NIA | NIA |

Miscellaneous Data

| | | | |
|-----------------------------|-----------------------|---------------------|-------------------------------|
| Orientation | Vertical | Support Type | Skirt |
| Insulation Function | Not Applicable | Insulation Material | Not Applicable |
| Insulation Thickness (inch) | Not Applicable | Internal Finish | Welds descaled as laid |
| | | External Finish | Welds descaled as laid |

Remarks

*** To be determined by the vendor.**

Note 1: Material shall have Carbon Content of 0.030% Max. Non-welded specialty items are excluded from this requirement.

Note 2: Nozzle necks below normal operating level are Primary, others Auxiliary. See PVDF and vessel drawing for NDE. ¹

Note 3: Additional NDE requirements should be as per 6.4 of the PVDF. ¹

Note 4: Contents of this document are dangerous waste permit affecting. ¹



MECHANICAL DATA SHEET: VESSEL

PLANT ITEM No.

24590-LAW-MV-LCP-VSL-00002

Equipment Cyclic Data Sheet

| | |
|------------------------------|-----------------------------------|
| Component Plant Item Number: | 24590-LAW-MV-LCP-VSL-00002 |
| Component Description | Parent Vessel |

The information below is provisional and envelopes operational duty for fatigue assessment. It is not to be used as operational data.

| | |
|---|---|
| Materials of Construction | SA-240 316 |
| Design Life | 40 years |
| Component Function and Life Cycle Description | Equipment Shut Down for maintenance occurs annually. |

| Load Type | | Min | Max | Number of Cycles | Comment |
|---------------------------|------|--|---------------|--|---|
| Design Pressure | psig | FV | 15 | 100 | |
| Operating Pressure | psig | -4.09 | 0.07 | 100 | Maximum of 100 start/stop cycles per 40 years of design life |
| Operating Temperature | °F | 59 | 122 | 100 | |
| Contents Specific Gravity | | 1.0 | 1.47 | 100 | |
| Contents Level | inch | 31.00 | 170.00 | 100 | |
| Localized Features | | | | | |
| Nozzles | | Within 50° F of vessel temperature. | | As above. | |
| Supports | | Same as vessel | | Number of cycles same as vessel | |
| | | | | | |
| | | | | | |

Notes

- Cycle Increase: The Seller must increase the numbers of operational cycles given above by 10% to account for commissioning duty unless otherwise noted.**